15 CENTS A COPY

THE OIL WEEKLY

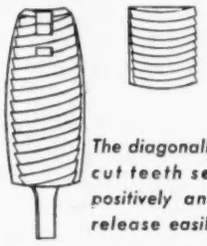
OIL & GAS ENGINEERING

News Statistics

60 sq. in. vs. 25 sq. in.

A Difference That Means Unquestioned SAFETY

THIS larger area of BJ Slips — more than *twice* that of ordinary catchers — means the BJ Tubing Catcher not only catches *positively* but that it *holds*, even when casing walls are worn and weak. Casing can not be damaged as *all* the face of the BJ slip contacts at the *same time*, distributing the load over a *greater* area of the inner wall of the casing. Additional "engineered" advantages make the BJ Catcher truly "A Sentinel of Safety." ● The figures above are taken from an actual comparison of slip area between BJ Tubing Catchers and other catchers made to operate in 6⅝ inch or 7 inch casing.



The diagonally cut teeth set positively and release easily

BYRON JACKSON CO.

LOS ANGELES
FORT WORTH
NEW YORK

BJ SURESTOP TUBING CATCHER

"A Sentinel of SAFETY"

A Core Bit for the HARDEST ROCK FORMATIONS

THERE is a Globe and H. C. Smith Core Bit for every formation. All bits are interchangeable, designed to run on Globe or Smith Coring Outfits. Bulletin No. 8-A on request.

GLOBE TYPE "F" ROCK CORE BIT

Designed especially for coring the hardest rock formations. Large cutting surface with fast cutting spiral teeth and replaceable unit cutter assemblies. Interchangeable so as to run on all Globe and Smith Coring Outfits. Sizes 5⅝" to 19" inclusive.

Globe Type "G" Core Bit: Sizes 7⅞" to 19"

H. C. Smith Type "B" Coring Outfit: For ordinary drag bit formations. Sizes 3⅜" to 30"

Globe Type "H" Core Bit: For fast cutting in tough formations. Sizes 5⅝" to 19"

H. C. Smith Type "C" Core Bit: For ordinary drag bit formations. Sizes 3⅜" to 14¼"

GLOBE OIL TOOLS CO.

LOS NIETOS, CALIFORNIA

Successors to

H. C. Smith Manufacturing Co., Inc.
Wieman-Kammerer-Wright Co., Inc.
National Tool & Metals, Inc.

Branches:

Ventura, Calif.
Longview, Texas
Bakersfield, Calif.
Kettleman Hills, Calif.
Oklahoma City, Oklahoma

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Announcing An Improved •Gaso Pump•

2½" to 5"x10" for 54 bbls. per hr. at 1500 lbs. to 250 bbls. per hr. at 750 lbs. pressure.

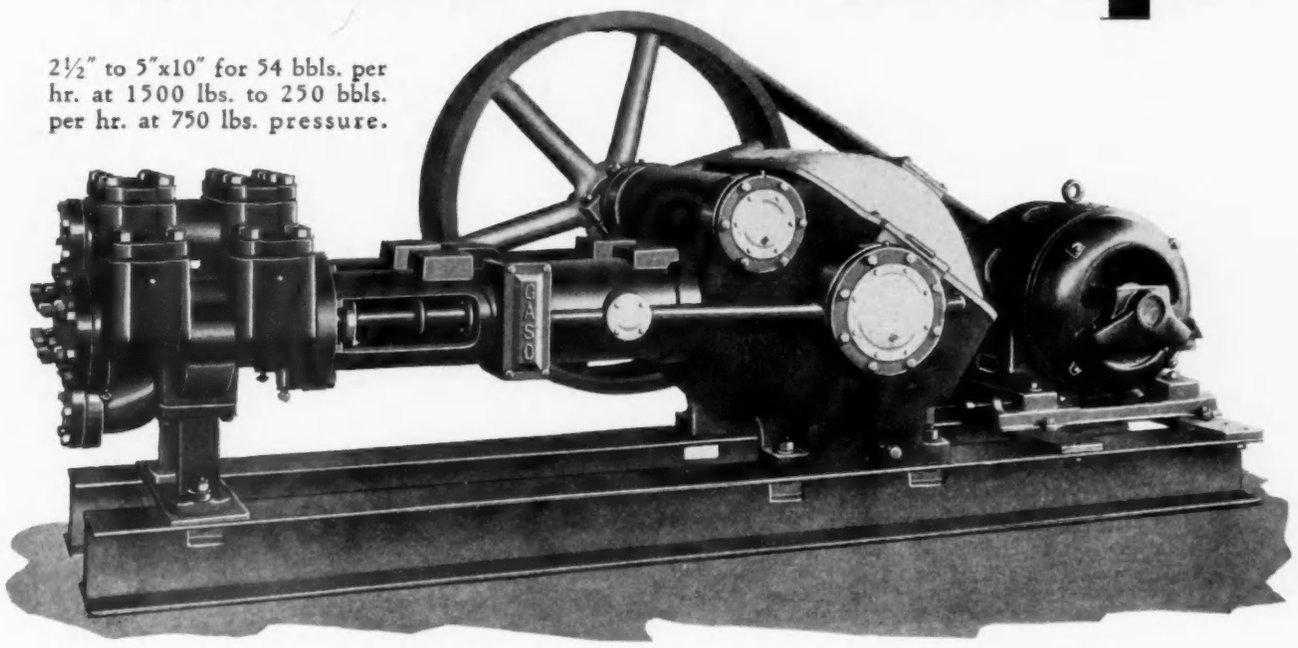


FIG. 1742 GASO DUPLEX PISTON HIGH PRESSURE DISCHARGE PUMP

Enclosed power frame . . . . Timken Tapered Roller Bearings, sealed off from crank case . . . . Center drive Herringbone Gears . . . . Frame of sufficient length to prevent overlap of piston rods . . . . Removable steel shell, babbitt lined connecting rod bearings in crank end . . . . Side pot type, heavy duty Fluid End . . . . Durable Stainless Steel valves, bronze seats . . . . Removable liners . . . . Cast iron pistons with iron snap rings.

GASO PUMP & BURNER MFG. CO. . . . Tulsa, Okla.

Export Office: New York, N. Y.

GASO PUMPS

FOR EVERY OIL INDUSTRY NEED

EMERGENCY

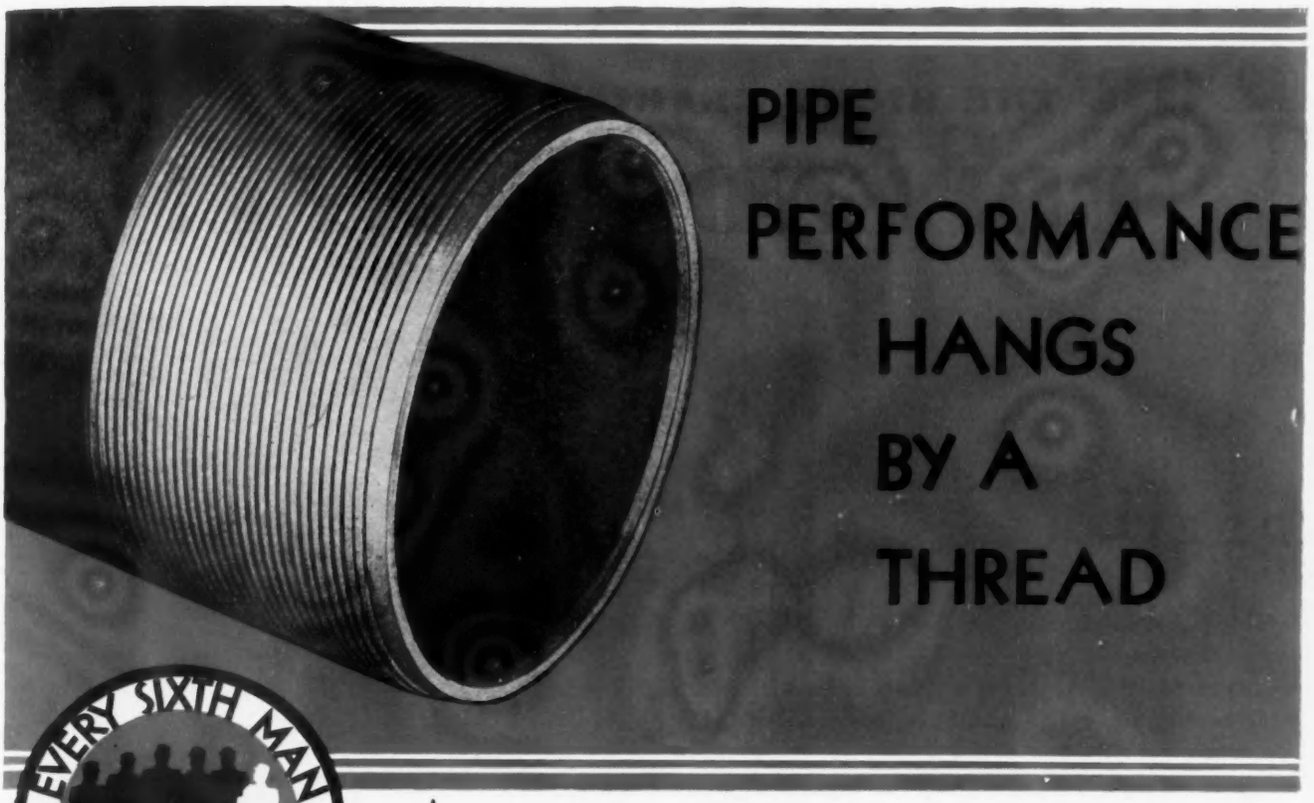
WHEREVER it's needed on the lease, a winch-equipped "Caterpillar" Tractor lends a willing line and husky power. The Bell and Graddy fire was attacked through a tunnel 170 feet long — the "Caterpillar" hauled out the loaded cars. Back to humdrum jobs next week—hauling, swabbing, digging — always ready for the emergency!

Prices—f. o. b. Peoria, Illinois

TEN	$1100	THIRTY	$2375
FIFTEEN	$1450	FIFTY	$3675
TWENTY	$1900	SIXTY	$4175

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.
Track-type Tractors Road Machinery
Combines
(There's a "Caterpillar" Dealer Near You)

CATERPILLAR
REG. U. S. PAT. OFF.
TRACTOR



Five men out of every six in the J & L Seamless Tube Department make the Seamless — the sixth man inspects it. He looks for trouble and flaws, so you won't have to. He's on our payroll — but he works for you. He's one of the many reasons why J & L Seamless stands so high in the estimation of every user.

A pipe thread is only a fraction of an inch wide and a fraction of an inch deep, yet it is frequently called on to take the titanic strain of lifting a mile of casing. Failure may mean the loss of tens of thousands of dollars. The thread *must* hold — and J & L spares no pains nor efforts to insure that it will.

J & L Seamless Pipe threads are smooth and accurate, with a bevel that means easy stabbing. Running the Seamless together, and breaking the joints, are both accomplished quickly and easily. There is no raggedness to cause turned threads; strings of casing, tubing and drill pipe may be made up time after time. The threads, smooth and accurate originally, stay that way.

The care taken in making and inspecting threads on J & L Seamless Pipe is typical of the care with which every operation in the manufacture of J & L pipe is carried out. The result is a product of uniform quality that will give you dependable service, and long time satisfaction.

JONES & LAUGHLIN STEEL CORPORATION

AMERICAN IRON AND STEEL WORKS

JONES & LAUGHLIN BUILDING, PITTSBURGH, PENNSYLVANIA

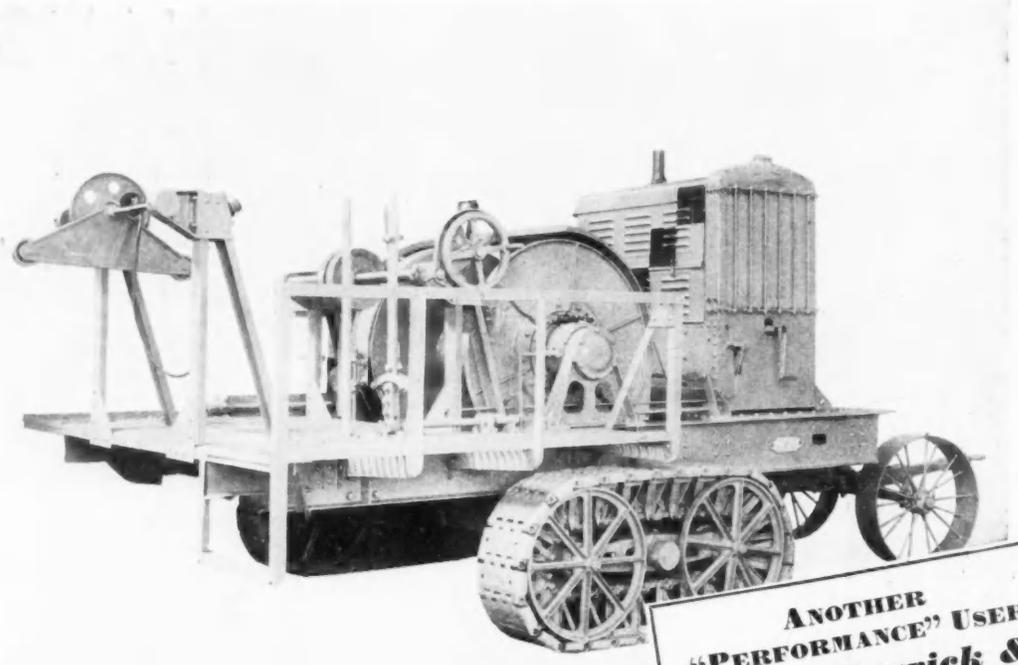
Manufacturers of Seamless and Welded Casing, Tubing, Drill Pipe and Line Pipe, and Welded Steam, Gas and Water Pipe in both Black and Galvanized

Also makers of Bars, Shapes and Plates, Reinforcing Bars, Cold Finished Steel, Junior Beams, Steel Piling, Fabricated Structural Work, Steel Barges, Wire Products and Tin Mill Products

J&L STEEL

FOR THE RIGHT BEARING EMSCO PICKED SKF

DEPENDABILITY!



ANOTHER "PERFORMANCE" USER
Emsco Derrick & Equipment Co.

WHERE PERFORMANCE TAKES PREFERENCE OVER PRICE

Wherever the Emsco "Water Witch" is sent there are no worries of bearings laying down on the job. Emsco has seen to that by equipping this portable oil well cleaning, pulling and swabbing outfit with SKF Spherical Roller Bearings on the drum shaft. Once again SKF Performance takes Preference Over Price in the oil fields.

SKF Bearings stand the gaff of the toughest jobs and render many years of satisfactory service. And what's more they require no adjustments. These factors plus high capacity and the SKF self-aligning feature for portable units governed Emsco in the selection of the right bearing for the right place to insure low cost operation.

You may buy a bearing as a bargain but try and get a bargain out of using it, for nothing is apt to cost so much as a bearing that cost so little.

2795

SKF INDUSTRIES, INC. 40 EAST 34th STREET, NEW YORK, N. Y.

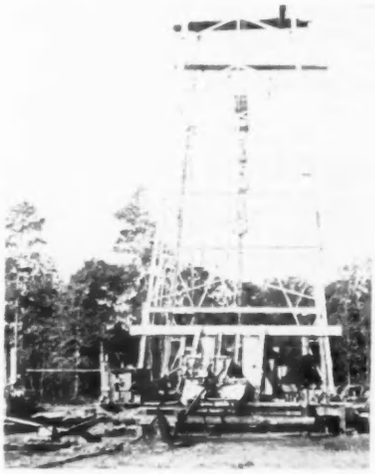
SKF

Ball and Roller Bearings

Ask Any One Who Has Used One

GREEN-HEAD BIT

Making Records Wherever Used



Another record — this time in Colorado — 5500 feet of hole with ten Green-Head Bits in record time is a matter of pride to the user and manufacturer.

This included the Hygene Sand which is the hardest formation encountered in the entire well.

Superior engineering, skilled workmen, rigid inspection, extra long blades that hold to gage — plus the fact that all Green-Head Bits are now set with inserts in addition to Haystellite hard surface is why records are made wherever Green-Head Bits are used.

FAST DRILLING IN EAST TEXAS

Upper Picture

This well, 3725 feet, was completely drilled with 11 Green-Head Bits and casing (including surface casing) was set in 5 days by Smith & McDannald, contractors, on Tidol Oil Co., Thompson Lease No. 2, Well No. 1.

Lower Picture; Left to Right:

M. W. McClure, driller; O. L. McLamore, J. C. Landers, C. B. Johnson, T. E. Maness; (tool pusher C. L. McKinney not in picture).

Pat. Pend.

RENTAL SERVICE

OKLAHOMA CITY, OKLAHOMA — **WICHITA FALLS, TEXAS** — **JOINERVILLE, TEXAS** — **GREELEY, COLORADO**

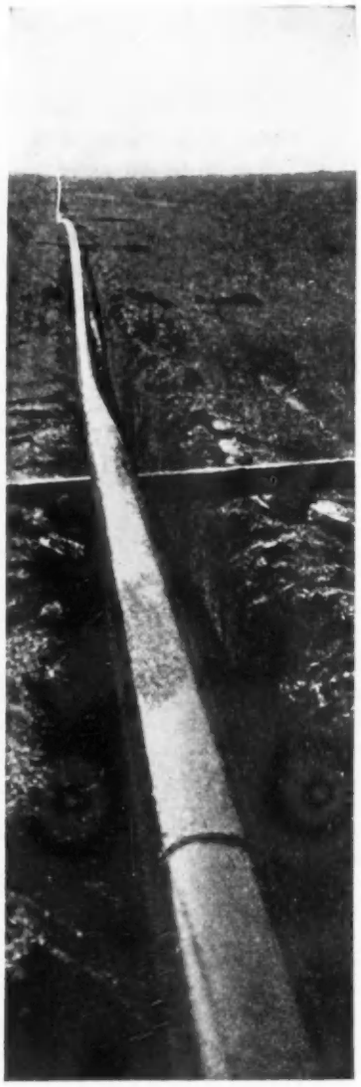
Manufactured and Serviced by

Snetcher & Pittman

Copyright, 1931
Snetcher & Pittman

HOME OFFICE AND PLANT: OKLAHOMA CITY, OKLA.

ON THIS LINE EACH WELDER MADE 60 TO 70 WELDS A DAY



ON a Lindewelded natural gas line in Texas, each welder averaged 60 joints a day on 6 5-8 in. pipe, and 70 on 5 1-2 in. pipe.

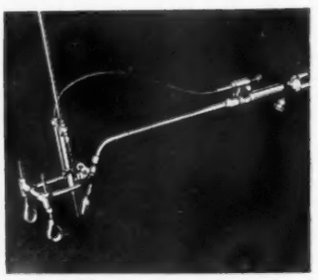
This record is not unusual. Lindewelding with an ordinary blowpipe increases speed 30 to 60 per cent. and lowers consumption of welding materials 35 to 40 per cent. With a special Lindewelder blowpipe, speed is further increased and welding becomes almost automatic.

Pipe lines laid by this new method of oxy-acetylene welding pass every test. Lindewelds are permanently strong and tight.

Procedure Controls for Lindewelding are available to all Linde customers through Linde Process Service. Consult our nearest district office for complete information.

See the Actual Steps in Lindewelding

Lindewelding technique differs from the neutral flame welding technique in that it employs a special rod, a special flame adjustment, and the "backhand" method of blowpipe manipulation. Our motion picture, "The Lindeweld Process for Pipe Line Construction," reveals the actual steps in making a Lindewelded joint. This picture, furnished in 16 mm. and 35 mm. safety film, will be loaned free of charge to pipe line officials and welding or engineering societies. You can obtain it by writing to any Linde District Office.



THE LINDEWELDER

A special appliance which further increases the speed of Lindewelding, and makes the welding operation almost automatic.

THE LINDE AIR PRODUCTS COMPANY

Unit of Union Carbide and Carbon Corporation

126 Producing Plants UCC 627 Warehouse Stocks

IN CANADA, DOMINION OXYGEN COMPANY, LTD., TORONTO

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LINDE OXYGEN • PREST-O-LITE ACETYLENE • OXWELD APPARATUS AND SUPPLIES • UNION CARBIDE

THE AMERICAN PETROLEUM INSTITUTE...

. . . is undoubtedly the most constructive movement ever undertaken by the Petroleum Industry.

As distributors, through stores and direct from factory and mill, of . . .

QUALITY PRODUCTS ONLY

. . . we are proud of our connection with responsible manufacturers who observe not only the letter but the spirit of the Institute's recommendations.

FRICK-REID
SUPPLY CORPORATION

● PITTSBURGH, PA. . . . . TULSA, OKLA. ●

● and BRANCHES ●

AXELSON

Sucker Rods; Pull Rods; Plunger Working Barrels (Pumps); Stuffing Boxes, etc.

BEAUMONT

Dreadnaught Water Cooled Drawworks; Timken Bearing Equipped Crown, Traveling and Tubing Block; Pumping Hoists; Bailing Line Reels; Steel Walking Beams; Casing Shoes; Anchor and River Clamps; Pitmans; Flow Line and Christmas Tree Fittings. Self contained Pumping Units, Tubing Heads.

DONOVAN

Oil Country Boilers and Tanks. Boilers range from low pressure to 350 pounds W.P., for the deepest drilling demands.

JONES & LAUGHLIN

Tubular Goods—Buttwelded, Lapwelded and Seamless in Line Pipe, Casing, Drill Pipe and Tubing.

RATIGAN

"SURE-GRIP" line of pumping equipment including Grips, Clamps, Beam Hangers, Rod Elevators, etc.

REID

Gas Engines, two and four-cycle; Band Wheel and Direct Drive Pumping Powers; Receiving Boxes and other refinery equipment.

ROEBLING

Wire Line; Gas and Electric Welding Wire.

ROSSENDALE

"Camel Hair" and Stitched canvas belting.

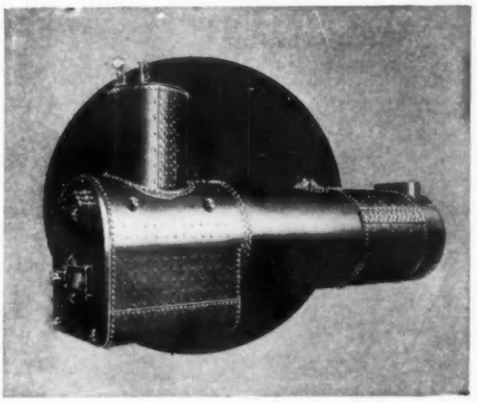
WALWORTH

Fittings, valves and tools for Oil, Gas, Air, Water and Steam; Sigma Steel Drilling Gate Valves; Flow Line and Refinery Valves.

WHITLOCK

Manila Cordage, Drilling Cables, Bull Ropes, Cat Lines, etc. Either Waterflex or Plain.

No Detail Too Small for Consideration . . .



Each Donovan boiler, 70 H.P. and larger, is provided with two blow-off connections, one in the bottom of the front-head and one in the bottom of the throat sheet, both on a line with the mud-ring.

These openings are made by placing a heavy steel flange inside the boiler which provides extra threads and which leaves practically no projections to become dented or damaged in handling the boiler.

This provides proper reinforcement for the opening and is the simplest possible arrangement. This arrangement also makes for ease in connecting Donovans up in batteries.

No detail of Donovan construction is too small for careful consideration.

Manufactured by
DONOVAN BOILER WORKS, INC.
PARKERSBURG, W. VA.

Donovan Boilers *are* Consistently Good

NEW YORK OFFICE—30 Church Street
FRICK-REID SUPPLY CORPORATION
Mid-Continent and Eastern Distributors

GREAT NORTHERN TOOL & SUPPLY CO.
MIDLAND IRON WORKS
Montana Distributors

DONOVAN BOILERS

MAKE THIS TEST WITH LAY-SET

THIS BASIC PRINCIPLE* IN WIRE ROPE STRUCTURE

Reduces Wire Rope Expense 10% to 70%

***PREFORMING** is a basic principle. In Lay-Set Preformed Wire Rope, wires and strands are set to their proper helical shape which allows them to lie naturally in position, relaxed, *without internal stress.*

■

Elimination of internal stress removes the chief causes for premature wire rope failure. Without internal stress each strand is allowed to do its share of the work—in perfect teamwork with every other strand—and with less internal friction. Crankiness, tendency to rotate in the sheave groove, slippage, high and low stranding, "bird caging"... these and a host of other faults identified with ordinary wire rope are greatly reduced with Lay-Set.

■

Lay-Set performance records from a wide variety of applications show increased services of 30% to 300% depending, of course, upon the type of equipment and character of service. This means, in dollars and cents an actual reduction in wire rope expense of 10% to 70%.

■

Let us send you—absolutely without any obligation—further information and a sample piece of Lay-Set Preformed Wire Rope—so you can see for yourself the difference in structure. Prove to your own satisfaction that internal stress is eliminated. The coupon below is provided for your convenience.

HAZARD WIRE ROPE COMPANY
WILKES-BARRE, PENNSYLVANIA

New York Pittsburgh Chicago Denver Fort Worth Los Angeles San Francisco Birmingham Philadelphia Tacoma

America's First Wire Rope —Since 1846

MAIL TODAY

OW—11-6-31

HAZARD WIRE ROPE COMPANY, Wilkes-Barre, Pa.

Send me complete information regarding Lay-Set Preformed Wire Rope.

Name.....

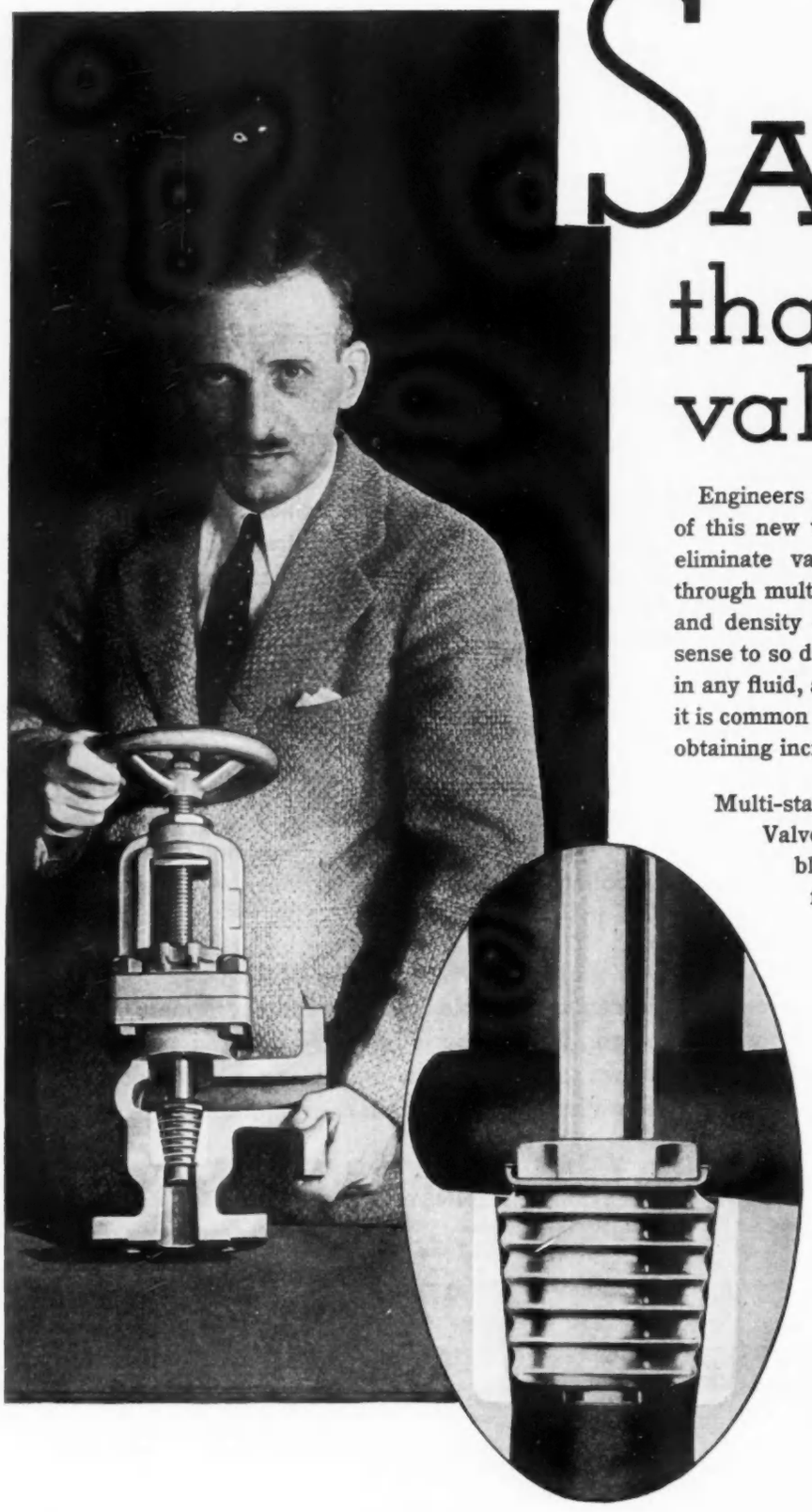
Company.....

Address.....

Town..... State.....

Wire Rope to be used for.....

HAZARD LAY-SET PREFORMED WIRE ROPE



SAY --

that's a real valve

Engineers quickly grasp the common sense back of this new valve design. It is common sense to eliminate valve erosion by removing its cause through multi-stage reduction of pressure, velocity, and density *across the valve seat.* It is common sense to so design the seat that it forms a tight seal in any fluid, at any pressure and temperature. And it is common sense to employ *wear* as the means for obtaining increasing precision and tightness!

Multi-staged for multi-uses, The Ludlow Multi-Valve is at once a perfect throttle, stop, blast and drain valve, and a tight seal for all viscous liquids and solution. Here, in the Multi-Valve principle, will be found the answer to flow control problems at higher pressures and temperatures. Material alone can never be the answer. It must lie in the multi-stage plug and cone — a sound engineering principle that can be applied to your own valve problems.

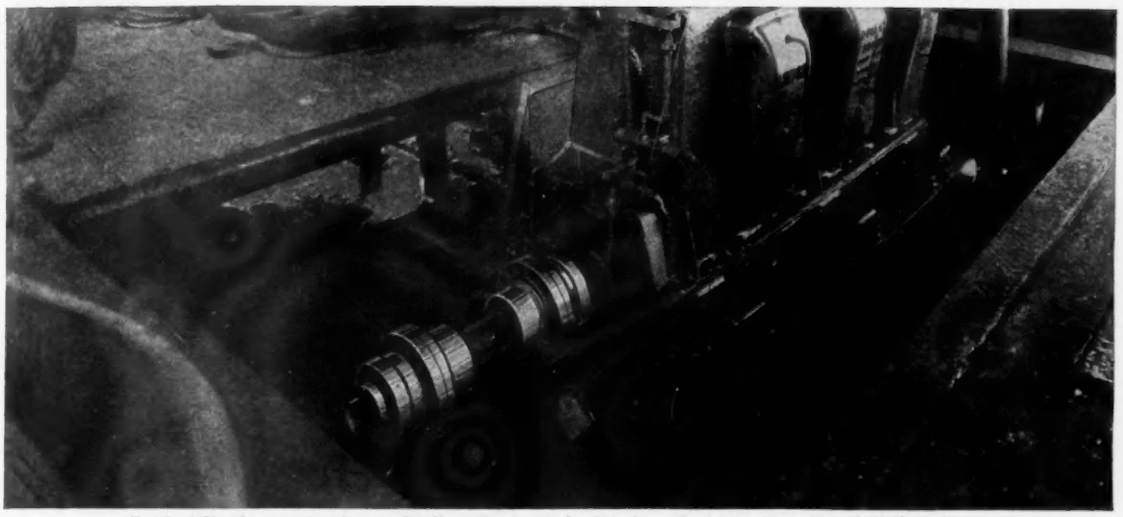
Engineers who would like to study the matter further are cordially invited to correspond with our Engineering Department. Bulletin 101, which illustrates and describes the valve principle in detail, will be sent at once.

The LUDLOW VALVE MFG. CO.

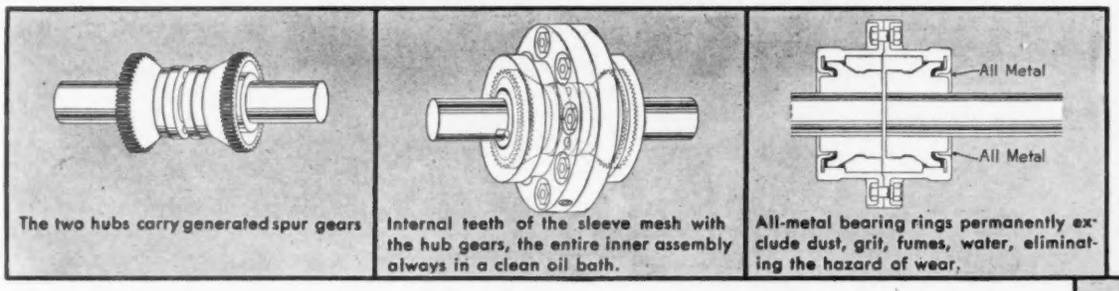
TROY · · · NEW YORK

1866 · First with the Gate Valve · · TODAY · The new Multi-Valve

STOP WEAR BEFORE IT STARTS



Fast's Self Aligning Coupling on Drilling Engine at the Petroleum Securities Corp., Signal Hill, California

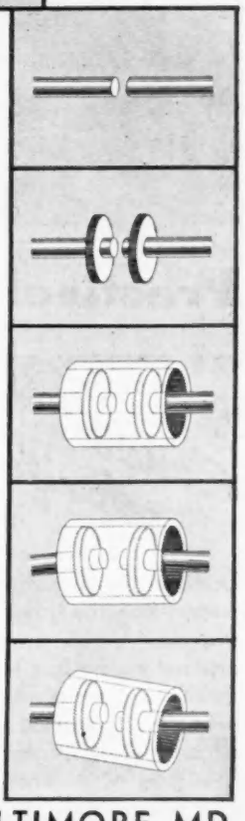


The two hubs carry generated spur gears

Internal teeth of the sleeve mesh with the hub gears, the entire inner assembly always in a clean oil bath.

All-metal bearing rings permanently exclude dust, grit, fumes, water, eliminating the hazard of wear.

Exaggerated diagrams showing development of Fast's principle of no flexible materials.



NO MATTER how carefully a flexible coupling is cared for and lubricated, to avoid wear it must be *permanently sealed* by a metal-to-metal contact, to prevent dust, grit, fumes and moisture from mixing with the oil.

Fast's Coupling is the flexible coupling with this metal bearing that assures perfect, grit-free lubrication at all times.

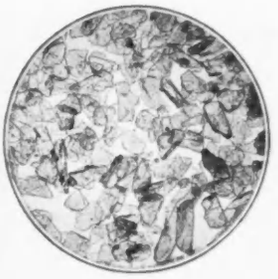
No make-shift, perishable materials that harden, dry out, or break are employed to seal Fast's Couplings. Metal bearing rings on metal hubs, machined to close tolerances, exclude grit and dust permanently and completely.

The side diagrams show how oil carries the load in Fast's Coupling. Note how it lubricates and cushions *between* the gear teeth. Oil—clean, fresh, dust-free oil—carries the load!

That explains why years of service have demonstrated that Fast's Couplings "last as long as the connected machines!"

FAST'S *Self-Aligning* PERMANENTLY DUST-PROOF COUPLINGS

THE BARTLETT HAYWARD CO. ◆ SCOTT & McHENRY STS. ◆ BALTIMORE, MD.



This reproduction of a photomicrograph shows how flakes of the internal reinforcement used by Barrett tend to interlock. They laminate with the water-proofing agent and give Barrett Pipe Line Enamels unusual tensile strength and toughness.

For pipe of large diameter The Barrett Company will furnish equipment required to revolve pipe and spread enamel.

Practical and scientific help at every stage of every problem

Barrett Specification PIPE LINE ENAMELS

During the 77 years that Barrett has been manufacturing waterproofing products a wealth of experience has been acquired. A wide variety of specialized problems in protection against corrosion have been analyzed and solved. The benefit of this accumulated data and the knowledge of the engineers and chemists who apply it is available without obligation. You may consult the Barrett Technical Staff on any problem of corrosion prevention with the certainty that you will receive sound, impartial advice.

The Barrett Company

40 Rector Street New York, N. Y.

Wound-rotor motor, Type MTO, with two adjustable speeds, available in ratings of 35/15, 50/20, 55/25, and 75/35 hp., 440 volts, 50 or 60 cycles—suitable for belt or direct drive

ONE MOTOR

- - *for Every Power Operation*

HERE'S a motor that can be used with every type of rig for a producing well. On the pumping connection, the number of strokes per minute can be adjusted to meet the exact requirements of each well, without changes in gears or pulleys. ¶In any pulling operation, the torque, speed, and acceleration are all under the control of the operator. This feature facilitates "spotting" the load and avoids unnecessarily heavy starting current and mechanical shocks. ¶The high torque (425 per cent, or more, of full-load torque) and unusually high thermal capacity permit overload performance far in excess of that available with other types of drives. Type MTO motors with unit control are available through G-E warehouses located near your operations.

GENERAL ELECTRIC also furnishes complete electric equipment to meet every pumping and drilling requirement of the oil fields—including such new G-E developments as automatic weight control and direct-current drive for rotary drilling.

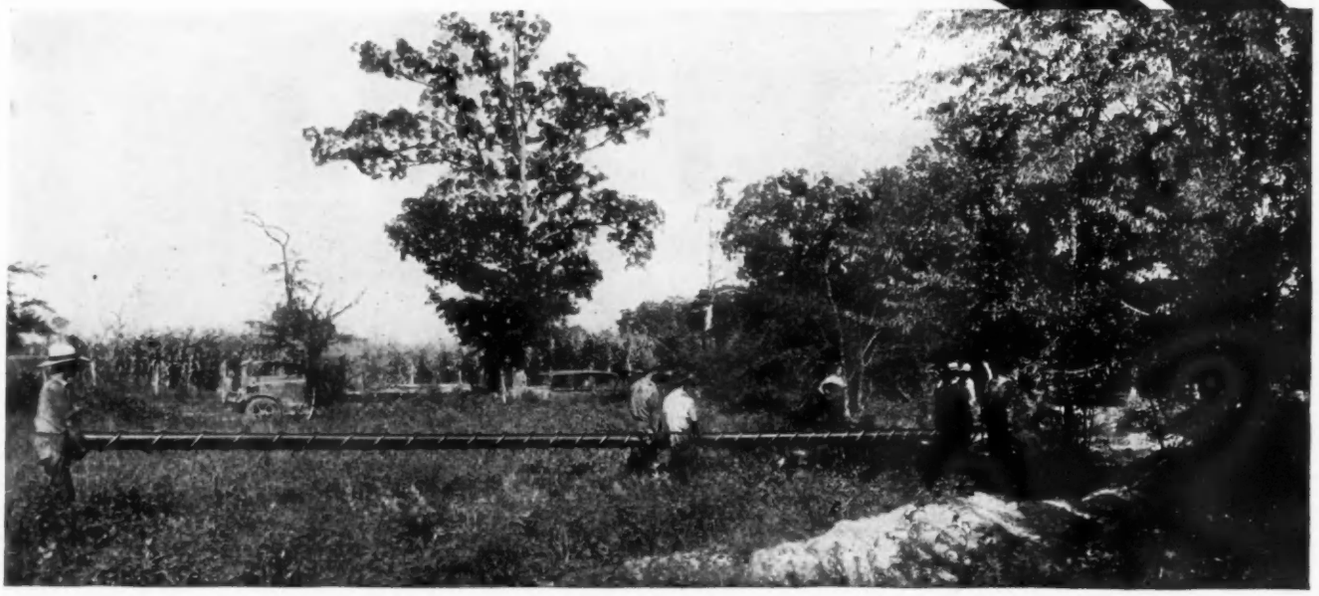
A nearby G-E office will be glad to supply complete information on any oil-field power application.

200-498

GENERAL ELECTRIC

SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

ECONOMY Means $$$ Saved



Laying a Naylor SPIRALWELD Pipe oil trunk line at Kinta, Oklahoma.

Light Weight Naylor *SPIRALWELD* Pipe Saves $$$ On Your Handling Costs!

HANDLING costs are a big item! They affect budgets, and increase total pipe line costs. Yet, handling costs can be reduced as many major oil and gas companies have proved by using *light weight* Naylor SPIRALWELD Pipe.

Naylor SPIRALWELD Pipe is made with an electrically welded spiral lock-seam truss which provides maximum structural strength with *minimum weight*. Compared with standard weight wrought pipe, Naylor SPIRALWELD Pipe weighs one half as much—yet, because of the added strength provided by the exclusive Naylor truss, it is being successfully used for the same pressures.

Light Weight Naylor SPIRALWELD Pipe is easily handled. Ease of handling assures rapid loading, hauling, stringing and laying. These definite time savings assure definite money savings...*lower handling costs.*

TRADE MARK NAYLORPIPE

PIPE CARRIED IN STOCK AT CHICAGO, HOUSTON AND LOS ANGELES

Proved Naylor SPIRALWELD Pipe advantages for air, water, gas and oil lines:

STRENGTH
FLEXIBILITY
LONG LIFE
LIGHT WEIGHT
WELD STAMINA
PERFECT ROUNDNESS

NAYLOR PIPE COMPANY

Main Office & Plant, 1230 East 92nd Street, Chicago

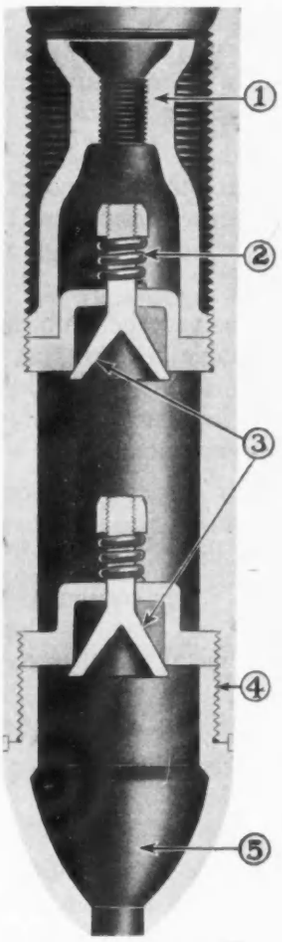
SALES OFFICES

NEW YORK, 3116 Chrysler Building
PHILADELPHIA, Witherspoon Building
TULSA, 507 Philtower Building
HOUSTON, 2301 Commerce Street
DALLAS: 305 Magnolia Building
LOS ANGELES: Champion & Barber, Inc., 576 Subway Terminal Building., Exclusive Distributors: California, Nevada and Arizona

MONTREAL, CANADA: Mechanical Equipment Company, 660 St. Catherine St., West
VANCOUVER, B. C.: Gordon & Belyea, Ltd., 101 Powell Street
MARACAIBO, VENEZUELA: Patrick H. Heeney, Apartado 298
MEXICO: C. H. Elstner, Apartado 284 Monterrey N. L.
BUENOS AIRES, ARGENTINA: H. A. W. Myrin, San Martin 66
TRINIDAD B. W. I.: Massy, Ltd., Port au Spain

If you want to produce MORE OIL

use a STANCLIFF SCREEN



Stands Hard Usage

without misplacing wires, thereby not changing the gauge. Every part of this screen is made rugged.

***Has often been set through whip stock* jobs without tearing the wire, thus winning the reputation among oil men for being as "*tough as the pipe itself.*"**

Used by many of the largest producing companies in the world.

All the Surface Is Screening Surface

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THE OIL WEEKLY

November 6, 1931
Vol. 63, No. 8

S. W. ROBINSON
Editor

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THE OIL WEEKLY

VOLUME 63, NO. 8 NOVEMBER 6, 1931

Supply Figures Support Advancing Crude Market

POSTING of higher crude prices throughout the Mid-Continent area has finally marked recognition of the industry's improved statistical position. It has been apparent for some time that higher crude prices were justified and facts to support that contention have been published from time to time*. However, the move toward a higher price level had been impeded because of uncertainties presented by continued high rates of development in East Texas. From a supply and demand standpoint, however, higher crude prices were justified weeks ago and the realization of the expected upward movement indicates clearly that confidence has supplanted uncertainty.

There is now every reason to believe that East Texas will definitely assume a more normal rate of development and a production program that will be in line with immediate economic needs. With the prospect that a majority of East Texas operators will support recently suggested measures of production and development control, there is every reason to believe that higher crude prices can and will be sustained. There is reason to believe, also, that the petroleum industry has passed through the worst of the depression and is definitely headed toward economic stability and more freedom from financial stringency.

A more optimistic outlook for producers and the petroleum industry generally is evidenced by the latest figures released by the United States Bureau of Mines. The September report shows that stocks of crude extended the declines recorded previously to the extent of nearly 12,000,000 barrels. This means that crude stocks on September 30 were 54,429,000 barrels below the quantity in storage on the same date of last year. Since January 1, 1931, stocks of crude have been drawn upon to the extent of 46,326,000 barrels. These figures reflect the success that has attended production control measures this year, and carry the conviction that a higher crude price level is justified.

*September 25, 1931, page 13, cited improved outlook for crude market as result of supply situation and prospects for controlling East Texas.

The advance in Mid-Continent crude oil prices of 15 cents a barrel boosts the price of 36 gravity oil to 77 cents a barrel, with top prices of 85 cents. East Texas oil now commands a market price of 83 cents. While Mid-Continent crude prices are still somewhat short of the top price of $1.00 a barrel stated by Oklahoma's Governor Murray to be the minimum at which the industry could afford to operate, it is significant to note that the increase was hailed with great rejoicing in practically all sections of the Mid-Continent area. To many, the price boost signifies the beginning of better times; the shift into high gear that may hasten the return to prosperity. If uncertainty over potential supply can be removed from the economic picture through concerted willingness to recognize the need for orderly development and reasonable rates of recovery, then the recent boost in prices will be sustained and will probably mark the beginning of a gradual upward trend that will finally result in a fair profit for everyone.

Crude production during September only amounted to 2,121,000 barrels a day, as compared with 2,207,000 barrels in August and 2,374,000 barrels in September, 1930. The total new supply of all oils dropped to 73,730,000 barrels in September, as compared with 77,668,000 barrels in August and 84,992,000 barrels in September, 1930. On a cumulative basis, crude production has been maintained during the first nine months of this year at a daily average rate of 2,312,000 barrels, in contrast with a daily average during the same period of last year of 2,528,000 barrels. Although low prices prevailing throughout all of this year to date have undoubtedly influenced the rate of production as well as the rate of imports, it cannot be denied that agreements to control the supply have played an important part in the industry's statistical improvement.

With uncertainty practically removed from the picture in East Texas, there remains a factor of uncertainty which is of immediate importance to the completion of the industry's improvement program. That factor is the rate at which

refineries are processing crude oil. While the September report of the Bureau of Mines shows that there was a decline in refinery still runs during that month; a reduction of about 100,000 barrels a day, it is apparent that refinery operations are excessive. Subsequent data for October shows that still runs are considerably above the normal rate indicated by the seasonal lessening in demand for gasoline. Runs for October should not have exceeded 2,335,000 barrels a day, whereas actual operations indicated an average of about 2,400,000 barrels daily. Still runs for the week ending October 24 amounted to about 2,472,000 barrels a day while the economic limit, dictated by the demand for gasoline, indicated a maximum of 2,335,000 barrels. A look ahead, to the end of this year, indicates that runs to stills should not exceed 2,175,000 barrels a day. That means, refinery still runs must be reduced to the extent of about 12 per cent, before the industry can attain complete equilibrium.

Too Much Refined

It is seen that the remaining obstacle to continued market improvement is the indicated over-production of refined products. Notwithstanding the fact that refiners have curtailed operations to some extent this year, the supply facts do not make a satisfactory showing. While crude stocks have been materially reduced, stocks of refined oils have actually shown a gain since the first of this year. The September report of the Bureau of Mines shows that refined oil stocks on September 30 aggregated 156,755,000 barrels. Stocks of refined oil in storage on January 1, 1931, aggregated 152,495,000 barrels, indicating a net gain during the intervening period of about 4,260,000 barrels. The gain in refined oil stocks, however, has been made chiefly in gas and fuel oils; gasoline stocks having shown a moderate decline. However, if runs to stills had been maintained in conformity with the demand for gasoline, stocks of that product as well as gas and fuel oil would have shown a decline.

Potential Bugaboo Removed

It is fairly certain now that the East Texas situation is becoming clarified and that there is no immediate threat of over-production in sight in the producing branch of the industry. The bugaboo of potential is not regarded as seriously today as it was some months back. Optimism has supplanted pessimism. If that optimism is to be maintained into next year and result in any degree of prosperity, it will be necessary for refiners to do their part in removing the remaining factor of uncertainty that exists in the refined oil market. The producer has succeeded in obtaining a justifiable advance in the crude oil market. The refiner will be forced to pay more for his crude and must necessarily get more for his products. However, if the refiner is unable to show a profit from the sale of refined oil, a further readjustment must follow, either in the form of lower still runs and a smaller supply of refined oils or another slash in the crude market. If refiners desire to do so, they can justify higher prices for gasoline and other refined products of crude. Only by so doing, can the industry as a whole sustain a higher and profitable price level.

Refiners have two months left in which to adjust their gasoline supply situation. If refinery runs are curtailed immediately to the extent of 12 per cent, it will be possible to reduce gasoline stocks sufficiently to justify a strengthening gasoline market. Market strength cannot be one-sided; the producer must necessarily depend upon the refiner's ability to maintain refined oil prices at levels which will justify his ability to maintain the official posted price.

Independents Stand on Statistics Presented to Tariff Commission

Washington, D. C.—Announcement by representatives of the independent oil producers that they had nothing to add to the material already gathered by the United States Tariff Commission in connection with its investigation into the differences in cost of production here and abroad, brought the scheduled hearing on the subject to an abrupt conclusion October 29 within a few minutes after Chairman Fletcher rapped for order.

For some time the commission has been studying costs of production, under a resolution adopted by the House, following a somewhat similar study made for the senate, which resulted in a finding that a difference of $1.19 existed in the cost of delivering Mid-Continent and South American crude to the Atlantic seaboard, in favor of the latter. The present study is more largely related to refined products, and a large volume of statistical matter has been submitted by the independent producers' association and gathered by experts of the commission.

It was pointed out, following the hearing, that the crude figures revealed that the advantage was so marked in favor of the foreign oil that domestic producers cannot compete in Atlantic seaboard markets. The same situation, Russell B. Brown, secretary of the independent association, declared, is shown with respect to refined products in the material submitted by his organization. At the present time, he said, the figures as to crude would probably reflect somewhat lowered levels, but the relationship would remain unchanged.

Feeling that they had nothing to add to the material already available, representatives of the independents believed that nothing would be gained by again traversing the same ground and, therefore, suggested their willingness to stand on the data previously submitted, bringing the hearing to a close.

The oil men announced their intention of renewing their fight to secure a tariff on oil and made known that headquarters would be opened in Washington in November from which the campaign before congress will be conducted. Efforts to secure an embargo on oil imports have been abandoned, but the belief is expressed that, despite the pressure of work in congress this session, there is a good chance of success for their appeal for tariff protection.

Texas Panhandle Allowable Reduced to 55,000 Barrels

Amarillo, Texas.—A reduction of 10,000 barrels daily in the output of the Texas Panhandle must occur if operators abide by the Texas Railroad Commission's new order released October 30, whereby the district is to produce a maximum of 55,000 barrels daily, beginning 7 a.m., November 1. During the week preceding this order the district averaged 65,175 barrels daily, or at a seasonal high mark that had been raised recently by partial restoration of crude prices. The district is to be prorated on a potential production basis per lease, with liberal exemptions for small producers.

This proposed cutting down of production is being offset partially by higher crude prices, which were advanced November 2 under the leadership of Magnolia Petroleum Company to a flat price of 73 cents in Gray County, and 66 cents in Carson, Hutchinson, Moore, Wheeler and Potter Counties.

Speakers on "The New Conception of Oil Production"

J. Edgar Pew
"The Policies Involved"

John R. Suman
"The Engineering View"

W. P. Z. German
"The Legal Aspects"

Production Control to Feature Institute Meeting

PRODUCTION control, long a subject of controversy within the industry, will again feature the program of the American Petroleum Institute's twelfth annual meeting, to be held November 10, 11 and 12, in the Stevens hotel, Chicago.

The newer ideas in oil production control including unitization, proration and conservation will be reviewed both from the viewpoints of industry and government at the general session of the division of production Wednesday afternoon, November 11. The report of the chairman of the division, Robert R. Penn, Penn Oil Company, Dallas, Texas, will review the accomplishments of the Institute in this field during the past year. The industry's particular interest in the subject will be stressed in addresses by J. Edgar Pew, Sun Oil Company, Philadelphia; John R. Suman, Humble Oil & Refining Company, Houston, and W. P. Z. German, Skelly Oil Company, Tulsa, covering policies involved, the engineering view and the legal aspects.

Efforts made by governments of oil-producing states to enforce conservation laws, especially along the line of interstate agreements, will be reviewed by C. B. Ames, The Texas Company, New York, in an address on "Agreement Between the Oil Producing States to Insure Uniformity in Conservation Law and Its Administration."

Sessions of the meeting will be given over largely to consideration of the petroleum industry's general problems and policies. Technical interests of the industry were served by the exchange of notes and experiences at mid-year meetings of the divisions of production, refining and marketing, leaving time free at the annual meeting for discussion of trends and developments of interest to every oil man.

Robert R. Penn
Chairman of the Division of Production

For the first time in several years the meeting will be addressed by a high government official, United States Secretary of Commerce Robert P. Lamont being the guest speaker at the annual dinner Wednesday evening, November 11. The subject of Secretary Lamont's address has not been announced, but it is expected he will speak generally on business conditions and specifically on the problems confronting the petroleum industry and efforts made by federal and state government and the industry itself to solve them.

The anti-trust laws, regarded by many as the greatest statutory barrier to self-regulation of the petroleum and

(*Continued on page 59*)

Program American Petroleum Institute Twelth Annual

Tuesday, November 10, 1931

Morning—10:30 A.M.

MEETING OF BOARD OF COUNCILLORS: (North Ball Room)

To nominate candidates for election as members of the Board of Directors.

Afternoon—2 P.M.

GENERAL SESSION: (Grand Ball Room)

The President's Address.
E. B. Reeser, Barnsdall Oil Corporation.

Report of Board of Councillors and Election of Directors.

The Anti-trust Laws and the Natural Resource Industries.
Oscar Sutro, Standard Oil Company of California.

East Texas and East Texans.
Col. J. Lewis Thompson, Kilgore, Texas.

Evening—8:00 P.M.

GENERAL SESSION: MARKETING. (North Ball Room)

Report of the Chairman of the Division of Marketing.
Edward G. Seubert, Standard Oil Company (Indiana)

The Gasoline Tax Evasion Problem and How It Is Being Met in Pennsylvania.
Clyde L. King, Secretary of Revenue, Commonwealth of Pennsylvania.

Uniform Gasoline Tax Laws to Prevent Tax Evasion.
William A. McAfee, Standard Oil Company of Ohio.

Wednesday, November 11, 1931

GROUP SESSIONS

9:30 A.M.

PRODUCTION DIVISION

GENERAL TOPIC: CORROSION OF OIL FIELD EQUIPMENT. (Grand Ball Room)

A. P. I. Pipe Coating Tests.
Gordon N. Scott, Research Associate, U. S. Bureau of Standards.

Corrosion of Production Equipment.
Stanley Gill, The Gulf Companies.

Relation of Pipe Line Currents and Soil Resistivity to Corrosion.
C. R. Weidner, Prairie Pipe Line Company.

10:00 A.M.

REFINING DIVISION

GENERAL TOPIC: MOTOR FUEL. (North Ball Room)

10:00 A.M.

MARKETING DIVISION

GENERAL TOPIC: MARKETING PROBLEMS. (South Ball Room)

Wednesday, November 11, 1931

2:00 P.M.

GENERAL SESSION

PRODUCTION: (Grand Ball Room)

Report of the Chairman of the Division of Production.
Robert R. Penn, Penn Oil Company.

The New Conception of Oil Production:

The Policies Involved.
J. Edgar Pew, Sun Oil Company.

The Engineering View.
John R. Suman, Humble Oil & Refining Company.

The Legal Aspects.
W. P. Z. German, Skelly Oil Company.

Agreement Between the Oil Producing States to Insure Uniformity in Conservation Law and Its Administration.
C. B. Ames, The Texas Company.

8:00 P.M.

ANNUAL DINNER (Grand Ball Room)

Address:
Hon. Robert P. Lamont, Secretary of Commerce.

Some Sinners I Have Met.
Douglas Malloch.

Thursday, November 12, 1931

GROUP SESSIONS

9:30 A.M.

PRODUCTION DIVISION

GENERAL TOPIC: DRILLING AND PRODUCTION PRACTICE. (Grand Ball Room)

Developments and Improvements in Drilling Practice and Equipment.
J. R. Gignoux, Shell Oil Company of California; Chairman, Topical Committee on Drilling Practice.

Improvements and Trends in Production Practice.
W. W. Scott, Humble Oil & Refining Company; Chairman, Topical Committee on Drilling Practice.

Report of Division's Nominating Committee.
O. D. Donnell, Ohio Oil Company, Chairman.

Election of Twenty Members of the General Committee of the Division of Production.

Thursday, November 12, 1931

10:00 A.M.

REFINING DIVISION

GENERAL TOPIC: LUBRICANTS. (North Ball Room)

10:00 A.M.

MARKETING DIVISION

GENERAL TOPIC: MARKETING PROBLEMS. (South Ball Room)

2:00 P.M.

GENERAL SESSION

REFINING: (North Ball Room)

Report of the Acting Chairman of the Division of Refining.
W. R. Boyd, Jr., American Petroleum Institute.

A Statistical Survey and Economic Forecast of The Refining Situation.
Oliver S. Ambrose, Tide Water Oil Company (for the Institute's Committee on Refining Statistics and Economics).
E. B. Swanson, U. S. Bureau of Mines (for the Federal Oil Conservation Board).

Aviation Problems.
William B. Stout, Stout Engineering Laboratories.

The Place of Research in Industry.
Frank B. Jewett, American Telephone and Telegraph Company.

Dividends from A. P. I. Fundamental Research Program.
J. Bennett Hill, The Atlantic Refining Company.

COMMITTEE MEETINGS

Saturday, November 7, 1931

Morning

11:00 a.m. Statistical Sub-committee of Committee on Refinery Statistics and Economics. (Private Dining Room No. 3)

Chairman: O. S. Ambrose
Secretary: Fred Van Covern

Monday, November 9, 1931

Morning

9:30 a.m. Committee on Refinery Statistics and Economics. (Private Dining Room No. 3)

Acting Chairman: W. R. Boyd, Jr.

Meeting, Stevens Hotel, Chicago, November 9-11, 1931

10:00 a.m. **Central Committee on Unit Operation.** (Private Dining Room No. 4)
Chairman: W. N. Davis
Secretary: C. A. Young

10:00 a.m. **Committee D-2 (A. S. T. M.) on Petroleum Products and Lubricants.** (North Assembly Room)
Acting Chairman: T. G. Delbridge
Secretary: R. P. Anderson

10:00 a.m. **Committee on Fire Prevention in Refineries.** (Private Dining Room No. 5)
Chairman: C. H. Haupt
Secretary: D. V. Stroop

10:00 a.m. **Committee on Disposal of Refinery Wastes.** (Private Dining Room No. 6)
Chairman: J. S. Hess
Secretary: D. V. Stroop

10:00 a.m. **Committee on Uniform Methods of Oil Accounting.** (Room 435-A)
Chairman: Rodney S. Durkee

10:00 a.m. **Middle Western Region Code Committee.** (Room 430-A)
Chairman: L. S. Wescoat
Secretary: Paul E. Hadlick

10:00 a.m. **Southeastern Region Code Committee.** (Room 423-A)
Chairman: H. W. Dodge
Secretary: Wiley Moore

Monday, November 9, 1931

Afternoon

2:00 p.m. **Eastern Region Code Committee.** (Room 422-A)
Chairman: C. G. Sheffield
Secretary: M. Louis

2:00 p.m. **Pacific Coast Region Code Committee.** (Room 421-A)
Chairman: V. H. Kelly
Secretary: W. K. Pearce

2:00 p.m. **Committee on Railroad Transportation.** (West Ball Room)
Chairman: Fayette B. Dow
Secretary: D. V. Stroop

2:00 p.m. **Committee on Testing Methods and Specifications.** (North Assembly Room)
Chairman: K. G. Mackenzie
Secretary: R. P. Anderson

2:00 p.m. **Board of Directors.** (Private Dining Room No. 1)

2:30 p.m. **Advisory Committee on Public Relations.** (Private Dining Room No. 7)
Chairman: Northrop Clarey
Secretary: Victor H. Scales

Evening

8:00 p.m. **Division of Production, General Committee.** (South Ball Room)
Chairman: Robert R. Penn
Secretary: C. A. Young

8:00 p.m. **Division of Refining, General Committee.** (Private Dining Room No. 2)
Acting Chairman: W. R. Boyd, Jr.
Secretary: R. P. Anderson

8:00 p.m. **Division of Marketing, General Committee.** (West Ball Room)
Chairman: Edward G. Seubert
Secretary: Paul E. Hadlick

8:00 p.m. **Committee on Fire Prevention in Marketing.** (Private Dining Room No. 4)
Chairman: R. A. Wotowitch
Secretary: D. V. Stroop

Tuesday, November 10, 1931

Morning

9:00 a.m. **Committee on Standardization of Refinery Equipment.** (Private Dining Room No. 5)
Chairman: Henry Thomas
Secretary: R. P. Anderson

9:30 a.m. **Central Committee on Drilling and Production Practice.** (Private Dining Room No. 4)
Chairman: H. H. Hill
Secretary: C. A. Young

9:30 a.m. **Advisory Committee on Statistics.** (Private Dining Room No. 3)
Chairman: O. S. Ambrose
Secretary: Fred Van Covern

10:00 a.m. **Committee on Automotive Transportation in Marketing.** (Private Dining Room No. 6)
Chairman: J. F. Winchester
Secretary: D. V. Stroop

12:00-2:00 p.m. **Board of Directors (Luncheon).** (Private Dining Room No. 1)

Wednesday, November 11, 1931

Morning

9:00 a.m. **Advisory Committee on Fundamental Research on Occurrence and Recovery of Petroleum.** (Private Dining Room No. 4)
Chairman: H. H. Hill
Secretary: C. A. Young

10:00 a.m. **Board of Directors.** (Private Dining Room No. 1)

Afternoon

4:30 p.m. **Committee on Nomination, Division of Production.** (West Ball Room)
Chairman: O. D. Donnell
Secretary: C. A. Young

Wednesday, November 11, 1931

4:30 p.m. **Committee on Nomination, Division of Refining.** (West Ball Room)
Chairman: C. L. Henderson
Secretary: R. P. Anderson

4:30 p.m. **Committee on Nomination, Division of Marketing.** (West Ball Room)
Chairman: H. W. Dodge
Secretary: Paul E. Hadlick

Thursday, November 12, 1931

Morning

9:00 a.m. **Correlating Committee on Measuring, Sampling, and Testing Crude Oil.** (Private Dining Room No. 4)
Chairman: C. A. Young

10:00 a.m. **Board of Directors.** (Private Dining Room No. 1)

10:30 a.m. **Committee on Pipe Line Crossings under Railroad Tracks.** (Private Dining Room No. 4)

12:00 noon **Executive Committee (Luncheon).** (Private Dining Room No. 1)

OTHER COMMITTEE MEETINGS

The following committees will meet at the time and place indicated to the members by the chairman:

National Committee on Interpretation of the Code.
Chairman: H. T. Klein
Secretary: Paul E. Hadlick

Committee on a Uniform State Gasoline Tax Law.
Chairman: W. T. Holliday

Committee on Gasoline Tax Evasion.
Chairman: W. S. S. Rodgers

Our Inadequate Oil Reserves

By VALENTIN R. GARFIAS

Manager, Foreign Oil Department, Henry L. Doherty & Company

IN these days of haphazard over-production of oil, not only the laymen but many an oil operator is led to believe that present conditions are not only inevitable, but that the available domestic reserves are amply sufficient to continue to over-supply the American market for an indefinitely long time. An unbiased analysis of the controlling factors involved, however, soon throws an entirely different light on the situation, and makes it apparent that all the known oil reserves in the United States available, even at reasonably high prices, would be exhausted in nine years if called upon to supply the entire needs of the American market. Obviously, as these reserves can not all be produced within the next nine years, it follows that they will be inadequate to supply requirements before that time.

The inadequacy of the American reserves has impressed others fully conversant with the questions involved—amongst these is Wallace E. Pratt, who in his customary lucid manner thus calls attention in a recent article to this rather general misconception:

"The petroleum industry at the moment is in the throes of over-production but there is no suggestion of an over-supply in sight. Our trouble is not that we have found too much oil, it is rather that we insist on producing tomorrow's oil today. In other words, as an industry we are powerless to control our production rate despite the fact that our reserves measured against our assured future requirements, are far from imposing . . . In spite of over-production, new supply is actually lagging at the moment."

A study of the factors involved naturally resolves itself into its two components of *supply* and *demand*, since it is more feasible to estimate the latter than the former, we will first analyze the American demand for petroleum and its products and endeavor to anticipate its future trend, and will discuss later the magnitude of the reserves available to meet the demand in question. The American demand, which includes oils consumed at home and those exported, as well as domestic supply, will be considered throughout the 20-year period including the 10 years preceding and following 1930.

Demand

Domestic Consumption: The domestic consumption of petroleum and its products (which for the sake of simplicity we will refer to hereafter as petroleums) was 458,424,000 barrels in 1921, increasing in fairly uniform ratio in succeeding years to a figure of 922,935,000 barrels in 1930. The annual consumption her therefore, more than doubled during the past 10 years. The consumption in 1931 is estimated at 900,000,000 barrels, showing a decline of about 23,000,000 barrels from the preceding year in line with the present downward tendency affecting all industry.

As regards the future, it is unreasonable to suppose that domestic consumption during the next nine years will remain practically stationary or trend downward, as this would imply that we had reached an all-time maximum in 1929 with the figure of 939,970,000 barrels. It is more logical to assume that consumption will continue during the next nine years at a gradual upward trend. In an endeavor to arrive at conservatively low figures a logical first step would be to assume that the demand for the nine years beginning in 1932 will increase on an average half as *rapidly* as for the previous 10, and on this basis, the demand in 1940 would aggregate 1,384,000,000 barrels. Reasonable as this assumption appears, it has been thought more tenable to estimate the American requirements in 1940 as the mean between 1,384,000,000 and the demand in 1931, which gives a figure of 1,150,000,000 barrels. A uniform rate of increase from 1932 to 1940 has been assumed after allowing for practically no increase during 1932 as compared to 1931. A study of the accompanying chart prepared on this basis conveys the impression that the resulting trend from 1931 to 1940 is conservatively low, and that even a somewhat steeper line could be justified in the light of previous records.

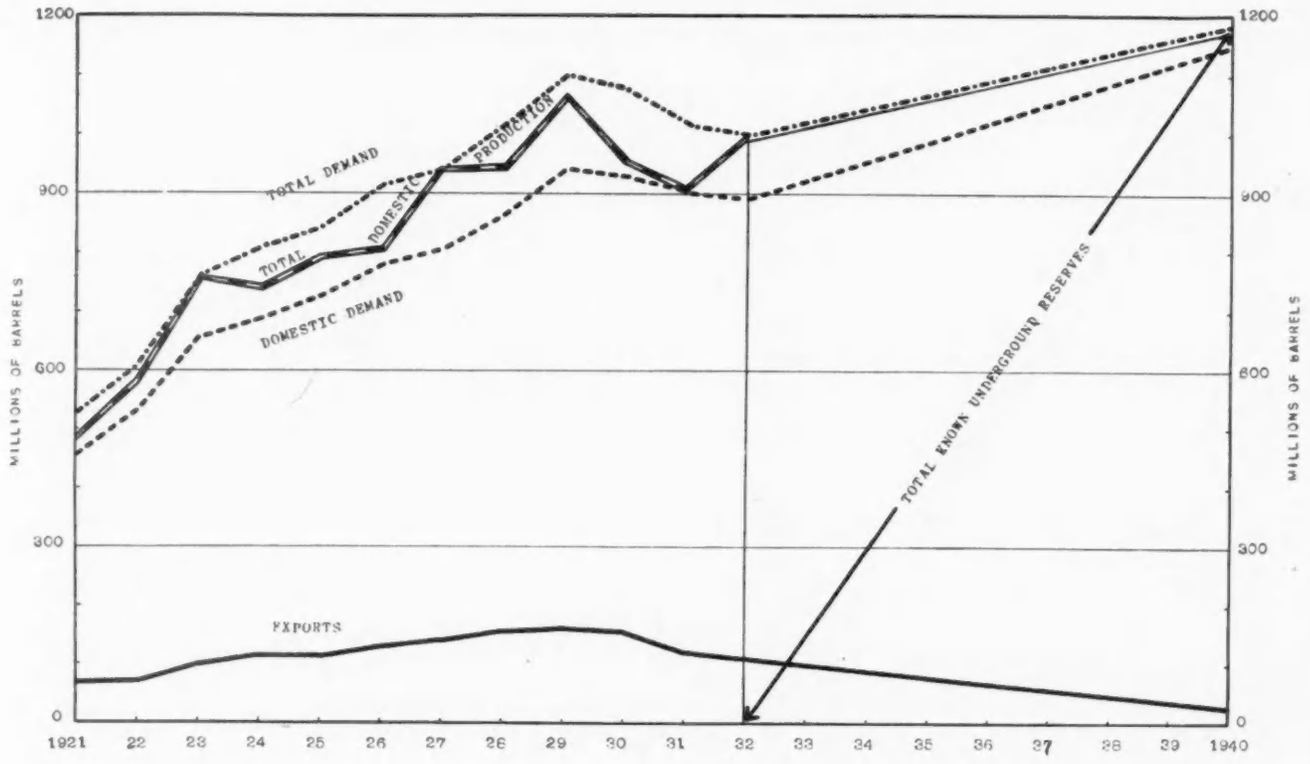
Exports

Exports: The United States has shipped petroleums to foreign countries in a gradually increasing volume from 70,390,000 barrels in 1921 to 162,257,000 in 1929, the yearly total decreasing to 156,666,000 in 1930 and 120,000,000 in 1931. In trying to anticipate their future trend it is reasonable to conclude that the trend will continue gradually downward throughout the next nine years, the conclusion being substantiated by the increasing supply of cheaper foreign oils, particularly from the Russian fields, which are readily accessible to European markets. It is realized, however, that the United States will continue to supply a certain amount of petroleums for consumption in Canada and other countries, and the export trade, no matter how small, will be continued. The exports in 1940 have been estimated close to 30,000,000 barrels after gradually declining from a figure of 120,000,000 in 1931.

On the above assumptions, the total demand for American petroleums, including domestic consumption and exports, for the nine-year period from 1932 to 1940, inclusive, aggregates close to 10,000,000,000 barrels. (See accompanying chart.)

Supply

General Statement: In studying the domestic sources of supply of petroleums, which include those derived from natural gas, we are faced with a number of misleading factors, which although given great weight by some authori-



ties, have little or no bearing on the problems confronting the American petroleum industry, at least, during the next nine years. Thus, even if it is admitted that crude oil can be obtained from the oil shales and coal fields and that the greater part of the oil originally existing in the oil fields remains underground after the wells cease to flow or to yield by pumping, it does not follow that these three types of reserves will ever be made economically available, and they will almost certainly not be utilized during the next nine years.

The following is a brief outline of the conditions relating to the petroleum reserves:

Oil Shales: The existence of deposits of oil shales in the United States, particularly in the Rocky Mountain region, has been known for many years, and careful estimates have been made of the quantity available and of the oil recoverable from them. The Committee of Eleven of the American Petroleum Institute in its report on American Oil Supply and Demand published in 1925, estimated the oil shales at about 394,000,000 tons, and their approximate yield at 108,000,000,000 barrels of crude oil, while Arnold and Kemnitzer recently estimated that these shale oil reserves aggregate 92,145,000,000 barrels or 15,855,000,000 barrels less than the Committee of Eleven.

It cannot be denied that oil-shale deposits represent a theoretical reserve of billions of barrels of oil, but it is one thing to admit its existence and another to accept that it will ever be feasible and economical to supply the entire American oil market with shale oil. In this connection the following quotations taken from a study on American oil shales by Martin J. Gabbin published by the United States Bureau of Mines are worth noting:

"To replace the present annual domestic output of oil would require an investment for retorts and refineries alone of $6,000,000,000, which does not include the investment of lands opening up and developing mines, transportation and marketing facilities, nor the cost of developing subsidiary enterprises without which a shale-oil industry could not exist. After the crude shale oil has been produced, its refining is more complex and more costly than the equivalent refining of petroleum."

The time may come when shale oil will supply part if not all of the demand for lubricants and motor fuels, but this will not be until the supply of petroleum from wells is reduced sufficiently to bring about a *stable* price much higher than the average price for crude oil in the past and some higher than the maximum prices ever paid for Mid-Continent crude. Some investigators place a price of $5 per barrel for Mid-Continent crude as a minimum at which shale oil can successfully compete with petroleum, and the price will have to be stable at or about this figure before the enormous investments necessary to utilize oil shale on a large scale can be justified. In passing, it is worth pointing out that the average prices of petroleum in the United States from 1856 to 1929, inclusive, has been about $1.27 per barrel.

Oil From Coal

Oil From Coal: The Committee of Eleven estimated the reserves of coal and lignite oil at 595,000,000,000 barrels, and although theoretically this statement may be tenable, for practical purpose it is obviously inacceptable. Many of the statements made in regard to oil shales in a general way, apply to the mining of coal for its oil values, and it follows that the oil-from-coal, like the oil-from-shale industry, can only be predicted upon the exhaustion of the oil fields to a point where the product can be sold at much higher average prices than have prevailed to date, and the question arises whether at that time it would not be more economical to utilize crude oil from foreign fields.

Petroleum Reserves: In considering the petroleum resources of the oil fields in the United States, we are forced to differentiate at the outset between estimates already made by various investigators. Obviously, a sharp distinction must be drawn between the oil not yet brought to

the surface in a producing field, the outer limits of which are more or less defined, the oil in known but non-productive fields, and the oil that may or may not be found in favorable structure, the existence of which is as yet merely conjectural. The reserves in the first two cases are, to say the least, known, while in the last they may be considered possible, or even probable, but in either case are unknown. Lastly, the Committee of Eleven introduced a perplexing factor when it undertook to class also as a reserve and give numerical value to the oil that remains underground after the wells cease to flow or pump oil, that is to say, after the field ceases to be commercially productive under conditions existing to date. This notwithstanding, the committee reached the conclusion that through certain methods as yet to be devised the oil in *abandoned* fields, will at some future time be brought to the surface in paying quantities. The committee estimates this reserve at 26,000,000,000 barrels, but in our study for obvious reasons, we will entirely disregard this estimate.

Reserves

Known Underground Reserves: The known underground reserves of petroleum in the United States include the crude oil and the products from natural gas that can be economically produced with a reasonable degree of assurance. The known reserves include, but should not be confused with the shut-in production which can be made immediately available, while the reserves presuppose not only additional, and in many cases, deeper drilling but considerable time in which to bring the total to the surface, their rate of *availability* conforming with the economic life of the fields with the corresponding periods of flush production and gradual decline. The known reserves which were calculated by the Committee of Eleven at 5,300,000,000 barrels have been variously estimated by other authorities from 8,000,000,000 to 13,000,000,000 barrels, the consensus of well founded opinion being that they represent at present figures of the order of 10,000,000,000 barrels.

It should be noted that the American fields have produced from 1859 to 1931, inclusive, close to 14,000,000,000 barrels, from an area aggregating about 4,650,000 acres, thus giving a productivity of 3000 barrels per acre and it will be seen, therefore, that a future production of 10,000,000,000 barrels presupposes the uninterrupted output throughout many years of wells draining millions of proven acreage.

As shown in the accompanying chart, the domestic production increased from 484,244,000 in 1921, to 953,320,000 in 1931, reaching a maximum of 1,061,000,000 in 1929, while the production in 1931 is estimated at about 902,000,000 barrels. The trend of production from 1931 to 1940, inclusive, has been assumed to conform with the domestic consumption plus exports.

Unknown Fields

Unknown Oil Fields: Obviously, not all the American fields that will produce oil in commercial quantities have already been discovered, on the other hand, it is not possible at this time to predict with any degree of assurance, their number, location, extent and productivity, nor the time when they will be discovered. It follows, therefore, that these fields provide only an intangible asset that may or may not be available when needed. Furthermore, experience has shown, as pointed out by Pratt, that in order to find and produce the volume of oil so far required, it has been necessary to drill an average of 20,000 wells yearly, while the drilling record for 1930 was far below this average and for 1931 is still lower. It is questionable if the oil fields yet to be discovered which likely will not be very numerous, probably deeper than present ones and increasingly hard to discover will offer more than a needed factor of safety to apply against the known reserves, so that the total domestic demand can be supplied *as fast as required* during the next three or four years.

Storage and Imports

In discussing the available supply of petroleums, we have so far omitted to mention petroleums now in above ground storage, estimated at about 640,000,000 barrels, and those imported into the United States which in 1931 will aggregate close to 85,000,000 barrels. Important as these two items are, they are not the controlling factors of the problem in question. Oil in storage is an absolutely essential safeguard, which can not be eliminated, nor materially decreased. Once over-production is eliminated or controlled, the oil stocks cease to be an additional burden on the industry, and become a necessary stabilizing agent.

In regard to imports, which have been gradually decreasing during the last three years, it is considered that their volume will be so restricted voluntarily or by regulations as to play a very minor part in the domestic supply of the future as long as domestic production is available at reasonable prices. In any event, it is felt that imports will be so controlled as to be equivalent, at most, to the oils exported from the United States, in which case the theoretical exhaustion of the known underground reserves would only be extended from nine to 10 years. For these reasons, we have felt justified in omitting from consideration both the petroleums in above ground storage and the foreign oils imported into the United States during the next nine years.

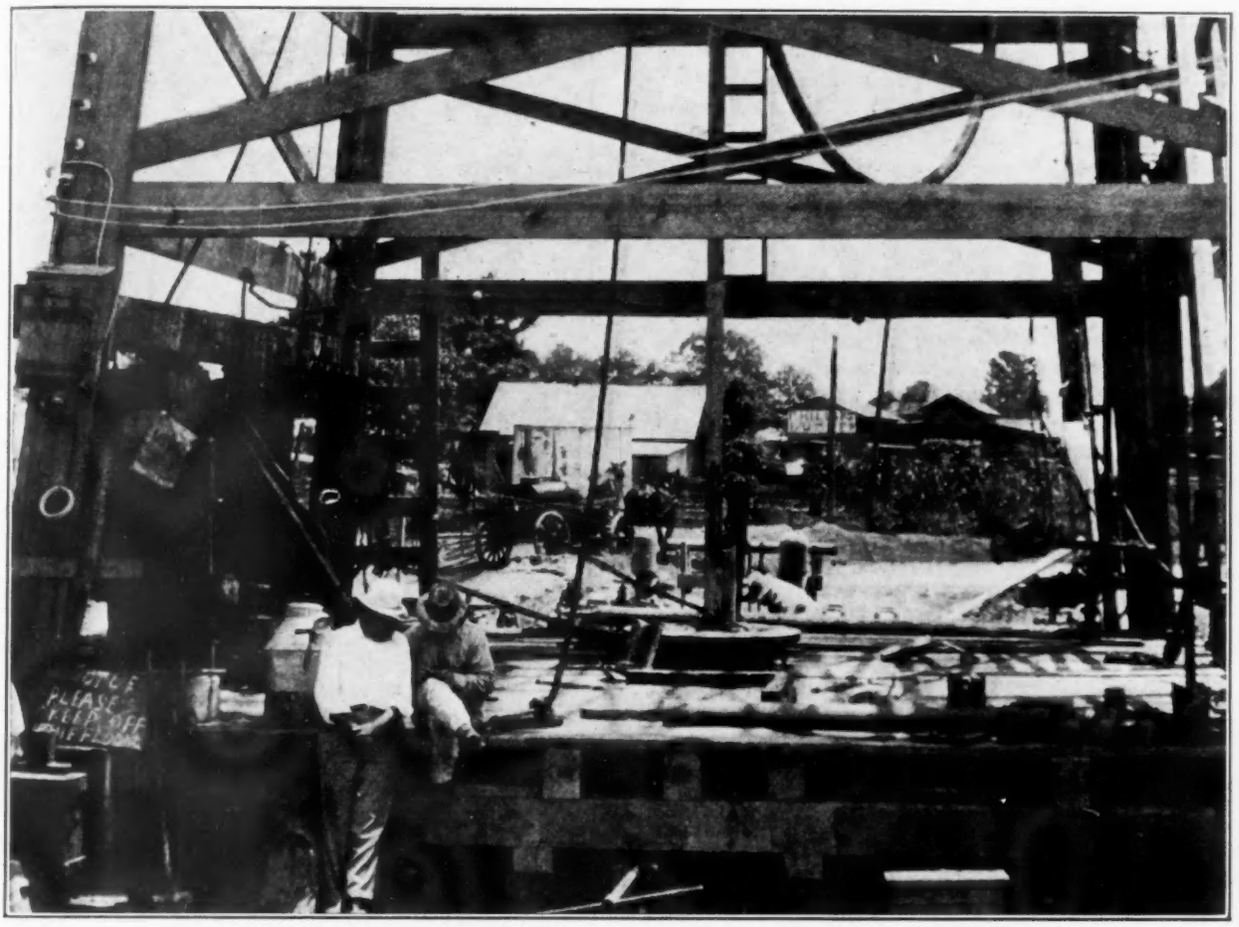
Summary and Conclusions

Summarizing the foregoing, it appears safe to assume that the domestic consumption of petroleum and its products in the United States will aggregate during the next nine years figures of the order of 9,000,000,000 barrels, while that domestic consumption and exports will total close to 10,000,000,000 barrels.

In order to meet these requirements we must disregard the oil to be recovered from oil shales, coals and lignite, and from exhausted oil fields. As the production from unknown fields can in no way be estimated, nor will these fields if they exist be discovered *on time* without an immediate acceleration of drilling activity which can hardly be anticipated, they do not offer any firm basis on which to guarantee future requirements. They afford, at best, a needed factor of safety in order to insure the total demands within the next, say, three or four years.

The underground reserve available to meet future demands, is the oil which constitutes the so called known underground reserves, estimated at close to 10,000,0000,000 barrels. Theoretically, these reserves can supply domestic consumption and exports for nine years, but in actual practice it is obviously impossible to *produce* their entire volume within that time, and they are, therefore, inadequate to meet such requirements. The known reserves will become available in a gradually diminishing volume for a longer period than nine years, and after making due allowance for inevitable discrepancies and errors, it is clear that long before this time elapses the American oil industry will feel the result of curtailed domestic supplies, and will have to rely more and more on foreign oils.

Paraphrasing Pratt, it therefore becomes imperative that the American oil industry reverse its policy of procrastination and take now the necessary steps to produce today only the oil that is actually needed and conserve today's over-production for tomorrow's needs.



Gladewater townsite well which was brought in with special precautions against a blow-out. It cleaned itself while flowing into the separator, not being turned first into an open pit as is the usual practice in the field

Townsite Drilling Made Safe in Gladewater

NUMEROUS fatal and disastrous blowouts and fires in the East Texas field in the past have served to impress operators with the imperative need for reliable equipment on their wells and for safe practices in completing the wells. It has been in the bringing in of producers that most of the fires have started.

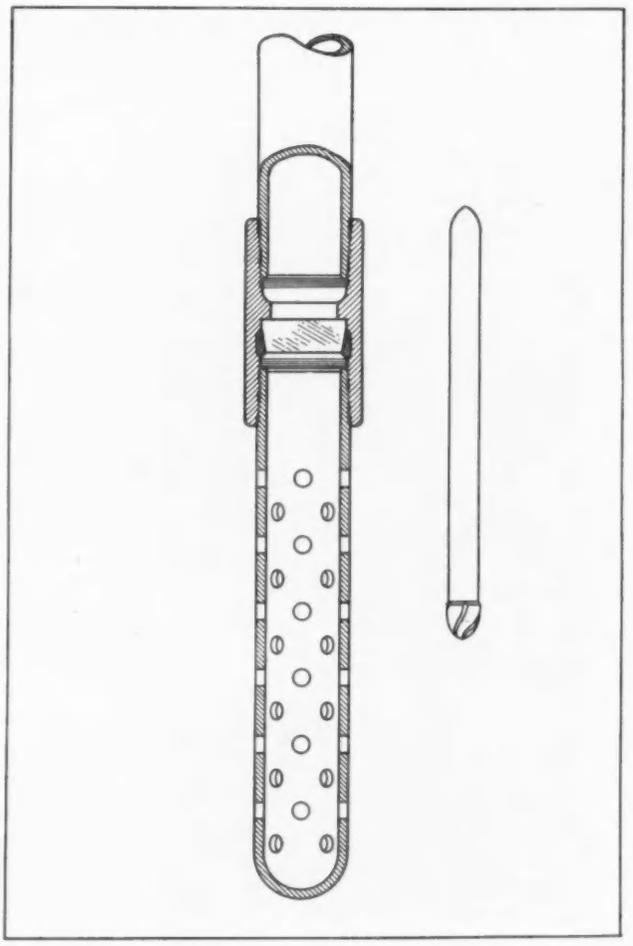
An example of some of the precautions which are now taken by the East Texas operators was demonstrated recently in completion of Tom J. Cannon's F. E. Rogers 1, in the town of Gladewater. The well was drilled in and tubed through a blow-out preventer, and it was washed in through the tubing. It was then turned directly into a separator, and the oil passed on to the lease tanks, the well cleaning itself and continuing its production without any time being allowed to flow into an open pit. The hazards incidental to the customary practice of allowing a well to clean itself by first flowing into an open pit were consequently eliminated.

On this well in the Gladewater townsite use was made of Cameron Iron Works blow-out preventer and tubing heads. The preventer was set on top of the surface casing, and the seven-inch outside diameter second string of casing was set through the preventer. After that seven-inch casing was cemented the well was drilled in through the blow-out preventer. Perforated liner was set through the casing, being placed in the oil sand and extending up into the casing. Tubing was then run into the well through the preventer and a tubing head, double precautions being taken against a blow-out during running of the tubing.

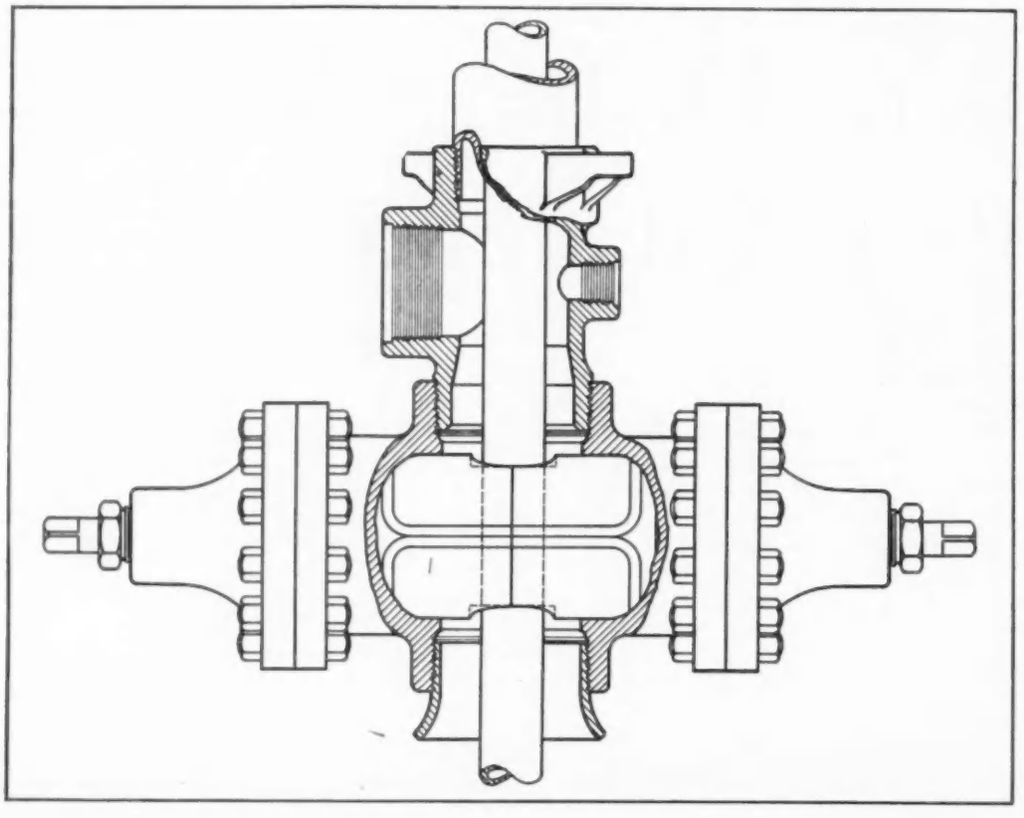
The well was then washed in through the tubing, the tubing having been placed near the bottom of the hole, and no swab-

bing being necessary. When it began showing gas the well was allowed to commence flowing into the separator which was mounted on a wooden platform not far from the derrick—a new type M. & V. separator, made by M. & V. Tank Company, Wichita Falls, Texas. The separator was equipped with an automatic relief valve, by means of which mud and fluid was dropped, while gas was released, the latter passing through a pipe to a corner of the lot, where it was allowed to escape into the air through a 20-foot riser. At that vent the gas was ignited, and it was burned while the well was cleaning itself as well as later, when regular production flow was established. From the separator the oil and mud-fluid were allowed to flow into one of the nearby vapor proof lease tanks, which were of the same make as the separator. Wash water and mud which accompanied the oil and gas while the well was cleaning itself settled to the bottom of the tank into which the flow was turned, and were later drained off. After cleaning itself the well began flowing at the estimated rate of 30,000 barrels daily.

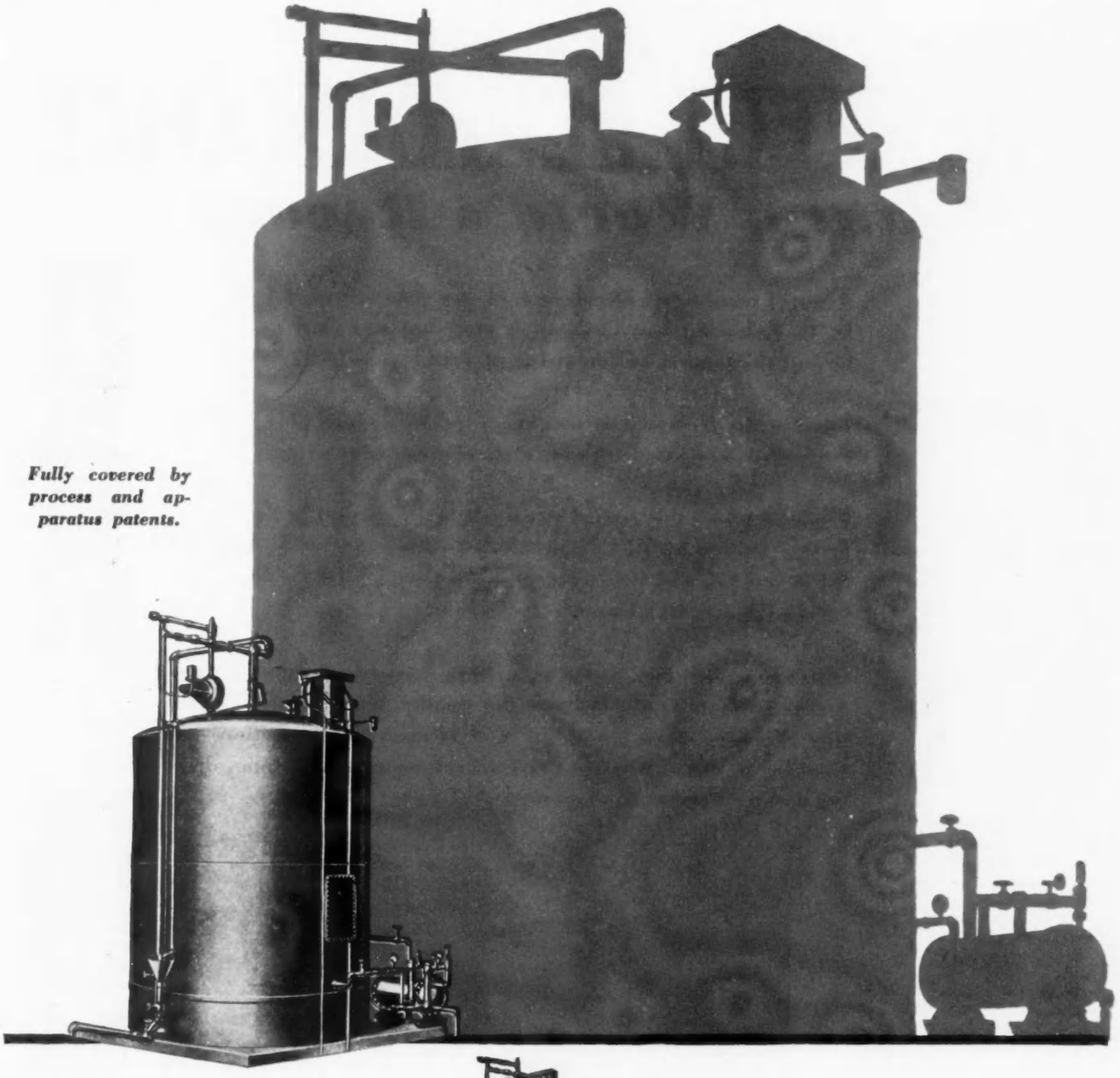
Aside from affording maximum safety to the owner of the well both as to property and human life, the described method of completing the above well was in conformity with regulations made by the town of Gladewater in a recently enacted ordinance.



At right: Special arrangement devised for bottoms of tubing strings in East Texas well. At the bottom of the regular 2½-inch tubing is placed a valve containing a pyrex glass disc, which prevents the well from blowing out through the tubing while the string is being run. After the tubing is run into the well a "go devil," shown at right, is dropped down through it and the glass disc is shattered, the "go devil" lodging in the perforated cage, which is screwed into the bottom of the valve. The cage is made in various lengths, depending upon how much perforated pipe the owner desires at the bottom of the tubing.



Blowout preventer and tubing suspension head especially designed to eliminate hazards of blowouts and fires in East Texas. The tubing is run dry, a pyrex glass disc being placed at bottom of the string and later broken with a "go devil" dropped inside the tubing. If the well should try to blow out from around the outside of the tubing, it can be closed in by closing rams in the blowout preventer against the tubing, these rams being operated by remote control, using a wrench extending slightly beyond the derrick floor, or farther away if desired



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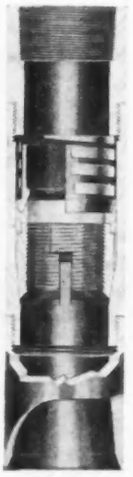
When PERFECT PERFORMANCE Meant a World's Record

A world record was established when an American, 4 Inch, 7½ O. D. Releasing and Circulating Overshot was used exclusively to pull the longest known string of drill pipe—10,079 feet.



Releasing and Circulating Overshot

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Oklahoma City, Drilling Contractor for the deepest well in United States

Imagine the tremendous weight—171,936 pounds plus the friction—that was lifted without difficulty or delay.

The well where this record was made is the deepest in the United States. Drilled by H. L. Blackstock Drilling Co. for Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Corp., West Cement field, Caddo County, Oklahoma.

Operators, like Mr. Blackstock, have learned to depend upon American Iron Tools, because the quality, workmanship, scientific manufacturing, durability and economy of operation—all combine to make possible Perfect Performance in fishing, drilling and production equipment.

Forged Steel Wall Hook

THE DRILLING CREWS:
(Right)

Front row, left to right: H. E. McNees, geologist, L. W. Jones, geologist, O. V. Dill, district foreman.

Center row, left to right: (crew on evening tour): J. F. Hughes, sample catcher, Pete Weise, derrick man, B. Goodwin, pipe racker, D. B. Butler, fireman, Y. Boles, driller.

Back row, left to right: (crew on morning tour): Pat Dailey, sample catcher, Jess Collins, Fireman, George Allen, floor man, Albert Beveridge, pipe racker, J. D. Bailey, derrick man, W. M. "Bill" Bailey driller.

AMERICAN IRON & MACHINE WORKS CO.
OKLAHOMA CITY, U. S. A.

MANUFACTURERS OF OIL FIELD EQUIPMENT

Set Record in Fishing Pipe *From* Oklahoma Deep Test

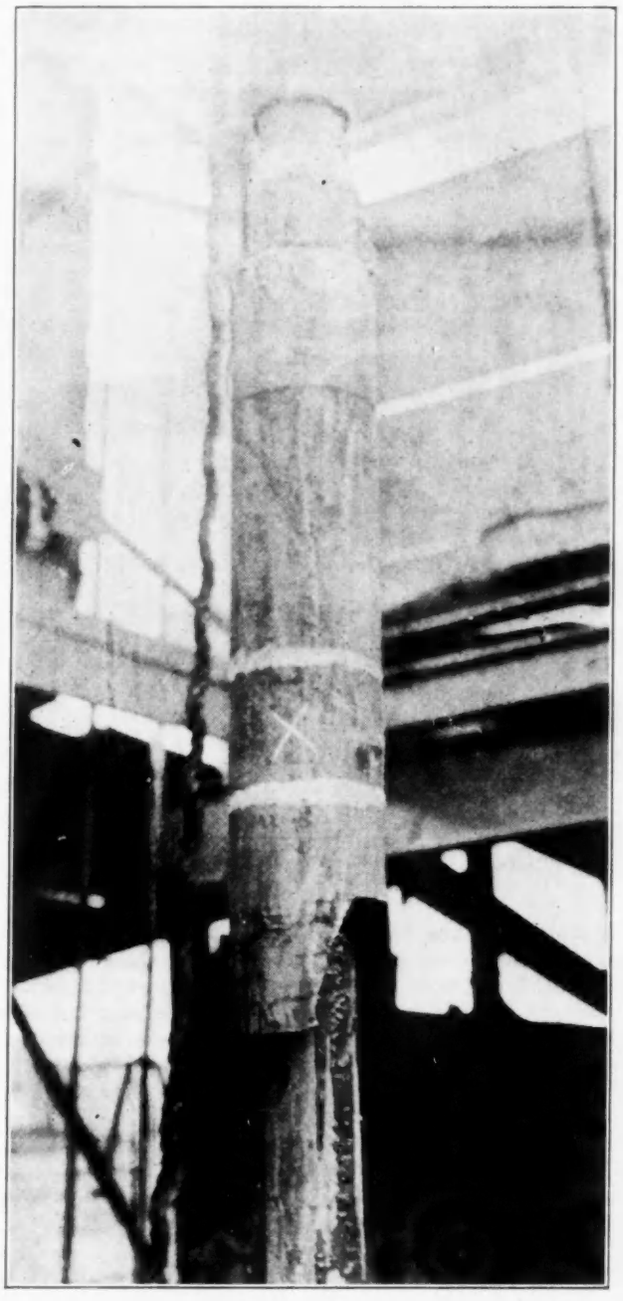
By FLOYD SWINDELL
Staff Representative

ROTARY drilling equipment and technique added another victory to its already long string of successes when, on October 8, Blackstock Drilling Company of Oklahoma City fished approximately 9765 feet of 4½-inch drill pipe from Mid-Kansas Oil & Gas Company and Ramsey Petroleum Corporation's Preston Culp 6, in the Cement pool, Caddo County, Oklahoma. Perhaps no other drilling crew has ever experienced a tenser two hours than did the afternoon tour which went in with an overshot and hooked on to more than 162,000 pounds of drill pipe standing in a hole that was 10,079 feet deep. In addition to being the deepest test ever drilled in the United States and the second deepest in the world this is also a record for fishing depth.

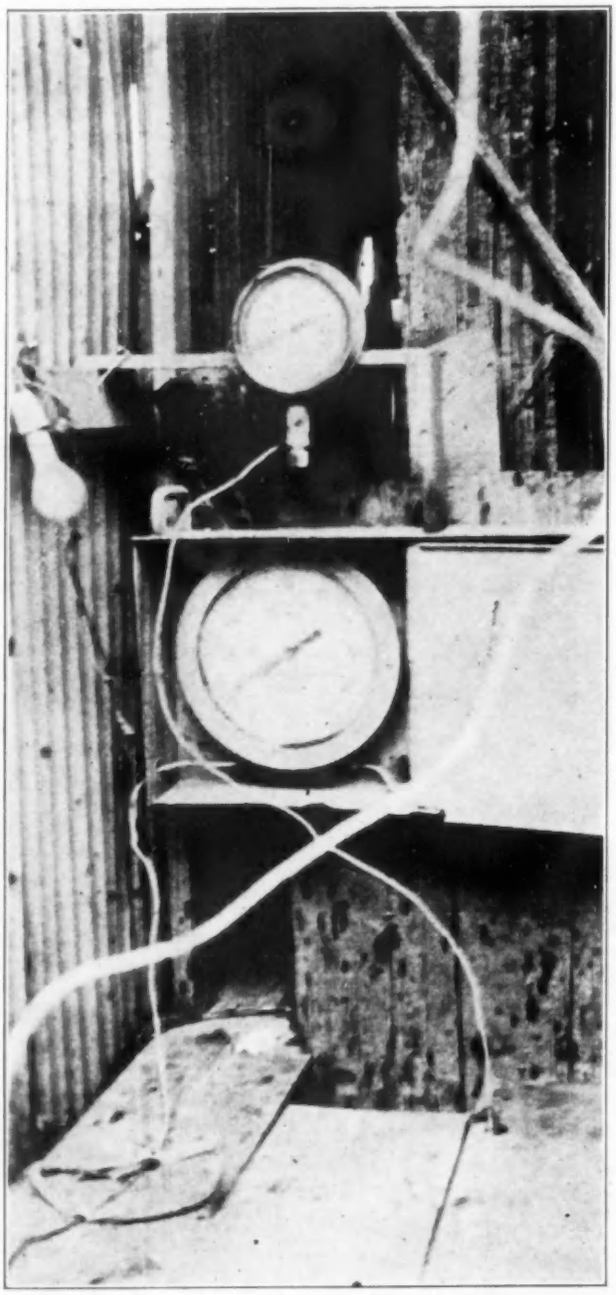
News that the drill pipe had parted at this great depth came as a shock to the operators and after a drilling record that had been marred by only one other fishing job. At 10,054 feet the bit had encountered a hard sandy limestone which was cored from 10,073 to 10,078 feet. At the latter depth the core bit quit cutting and when pulled from the hole was found to be worn beyond further use. A hard formation rock bit was then run but it too failed to cut more than a few inches of what is apparently a hard, closely cemented sandstone. When brought to the surface it was found to be badly worn and one cone was missing. Wear on the bit head indicated that it had cut around the margin of the hole, leaving a cone-shaped center which held the cutting surfaces off bottom. The damaged bit with one cone was run back into the hole in hopes that by wearing the bit head down and with the cutting action of the loose cones, the central portion of the formation could be cut out.

At 8:30 a.m., the driller had the tools rotating slowly and was carefully holding the weight up in an attempt to wear down the formation so that a new rock bit could be run. Without warning the pump started "running away" and the drop in pump pressure from about 1200 pounds to almost nothing indicated that the drill pipe had parted well up into the nine-inch casing which was cemented at 5515 feet. Considerable difficulty had been experienced in keeping the mud in proper condition due to the cutting action of gas coming from a sand at 8735 to 8820 feet and just prior to the twist-off the mud had been reconditioned by the use of Baroid. Gas from this sand threatened to blow 12-pound mud from the hole when the formation was being drilled.

In pulling on the upper portion of the drill pipe the traveling block jumped about eight feet, jumping one of the lines out of a crown block sheave. About two hours were required to put this line back in place and another two hours were consumed in rigging up and preparing the overshot. It was feared that standing for such a long time without circulation might permit the heavy mud to floccu-



American Iron and Machine Works overshot. Two chalk lines and cross indicate the area which was swelled three-sixteenths of an inch due to the action of the slips under a terrific load.



Martin-Decker weight indicator and pump pressure gauge.

late and freeze the pipe. The drill pipe had parted about 315 feet below the derrick floor, apparently through a tensional break which left the pipe egg-shaped and greatly decreased in diameter. At two o'clock the overshot was started into the hole and a few minutes later it had contacted the "fish." A part turn with chain tongs brought the overshot into proper position and it went over the pipe easily.

After taking all slack out of the drill pipe the pump was started and a pressure of 1100 pounds built up almost immediately. A few seconds later the pressure gauge stood at 1200 pounds, indicating that the overshot had shut off completely since 1200 pounds was normal pressure when pumping from bottom at this depth. At four o'clock the overshot reached the surface with approximately 9765 feet of drill pipe and bit hanging below it. This brought to a close one of the most nerve-wrecking two hours that the crew had ever experienced and many sighs of relief were heard after the slips were securely in place. Without giving consideration to the buoyancy of the mud or to the weight of tool joints, 9765 feet of 16.6-pound pipe weighs 162,099 pounds. During the pulling operation the weight indicator many times stood near the danger point, but all equipment stood the strain nicely. Since the tools had stood on bottom about five hours without circulation it is likely that the actual load was as much as 81 tons and probably more. Due to this great load the overshot swelled three-sixteenths of an inch adjacent to the slips but an inspection did not show that the wall had approached the breaking point.

Too much cannot be said for the equipment which was used in successfully completing this remarkable fishing job and it would be amiss not to mention the extreme care exercised by the drilling crew. These men, all of whom are well trained, knew that they were working in a spot where anything might happen. Had they been unfortunate enough to drop the pipe any considerable distance there is little doubt that the traveling block would have gone through the crown block. Breaking of any of the equipment might have resulted in the loss of life of any member of the crew, severe damage to the derrick, or in the abandonment of this most interesting test. Most progressive operators have recognized the value of weight indicators as a scientific aid in drilling but its value on this fishing job is almost inestimable. Since the first few stands of pipe were pulled a joint at a time it was advantageous to circulate as little as possible. The driller was informed at all times as to the amount of strain placed on the equipment and at any indication of sticking of the pipe, the kelly was put on and circulation resumed until the indicator showed that the pipe was free.

Texas Conservation Group to Form Permanent Organization

Fort Worth, Texas.—Members of the Texas Oil & Gas Conservation Association will meet here 2:30 p.m. November 6 at the Texas Hotel to set up a permanent organization, according to Charles F. Roeser, Fort Worth proration leader who was elected temporary president when the association was created in Dallas September 10 through the consolidation of five organizations then being fostered by independents. The new organization has more than 2000 members, representing independent and major operators, and has been particularly active in dealing with situations arising in the East Texas field. The body took the initiative October 27 in having the East Texas proration plan switched from a flat allowance per well daily to an acreage plan of allocating production allowances on each lease as a means of curbing unnecessary drilling in the field.

Reeser Reported Considering California Co-ordinator Bid

Tulsa.—Edwin B. Reeser of Tulsa, president of the American Petroleum Institute and of Barnsdall Oil Corporation, returned last week from a short visit in New York and declared that he was seriously considering the offer of the California oil industry that he become arbiter and co-ordinator of the oil business in that state.

"I am giving serious consideration to the offer of the California industry and will advise them soon," said Reeser. "The offer I deem not only a personal compliment, but also a constructive step and which may react favorably to the industry in general." Mr. Reeser presides for the third time at the coming meeting of American Petroleum Institute in Chicago.

East Texas "Hurry-Up" Methods Cause Many Crooked Holes

By MORTON T. HIGGS
Sperry-Sun Well Surveying Company, Dallas, Texas

THE attention of everyone connected with the oil industry is at present centered in the East Rim Fields in East Texas. The shallowness of the pay horizon, the relatively soft formations penetrated and the lack of restriction in producing the wells have encouraged fast drilling, and in many cases the drilling has been done as rapidly as possible without any check as to the straightness of the holes, some wells having been completed in less than 10 days drilling time.

This rapid drilling without any precautions has resulted in many crooked holes, some of which have been surveyed and others completed without being checked in any way.

A well in the Joinerville pool, after having reached a depth of 3300 feet without checking, was surveyed for deviation from the vertical and it was found to be 20° off at 2500 feet and over 50° off near the bottom. This well was plugged back about 1000 feet and redrilled.

In another case no tests for verticality were made until after the casing was set. The test then made showed the hole to be straight to 1500 feet, 15° off at 2000 feet, 30° off at 2500 feet, and 15° off at 3600 feet, the bottom of the casing. It is obvious that the cost of pumping this well will be prohibitive.

Another well was found to be 43° off the vertical at 2200 feet. This well was, of course, plugged back and redrilled.

In a well which, when drilled, was located about three miles west of the nearest production, the formations were running considerably lower than had been expected. The consensus of opinion was that this well would be a water well. Then, to the surprise of all concerned, a rich oil sand was cored. No checks for deviation from the vertical had been made, but after coring the oil sand, the owners suspected that the excessive depth was due to a crooked hole. A directional survey was ordered to be made with the Surwel Gyroscopic Directional Well Surveying Instrument. In most cases the results of such surveys are known only by the owner of the well. In this case the owner, for the benefit of all producers who do fast drilling, permitted the publication of the results of the survey.

This survey showed that the maximum deviation from the vertical was 21°, with several very abrupt changes. At one depth, the angle of deviation changed from 21° to 10° in the length of about one fourble, 90 feet. The bottom of the hole was found to be 220 feet in a northwesterly direction from the mouth, and the vertical correction in depth was 42 feet. This correction, applied to the logged depth of the well, placed the top of the producing sand at 3323 feet below sea level. Since completion of this well, an offset to the south was drilled, which showed the top of the sand at minus 3317 feet. The east offset has also been drilled, with the top of the sand at minus 3310 feet.

The examples given previously, bring out very clearly the necessity of using an accurate instrument for *daily checking of the straightness of the hole as drilled,* thus enabling the driller to correct the deviation immediately when noted.

These examples also show the need of *obtaining a directional survey with a reliable instrument when approaching the pay sand.* A directional survey would give the producer and his geologist an accurate map of the entire course of the well, showing the amount off at any point in the well, the correct vertical depth, and the exact location of the bottom of the hole. This invaluable information would enable the operator to set casing at the proper place, to accurately check the subsurface structure, to gauge the amount of pay that may be drilled safely, and to properly space the wells so that the greatest amount of oil can be recovered from the minimum number of wells.

There are a number of instruments which are being used to obtain the amount of deviation from the vertical. These may be divided into two general classes, those using mechanical means and those using a fluid level.

The first class would include all pendulum clinographs and other instruments of like nature. These instruments are usually limited to about a 15 to 20° reading, and may, if out of order, give erroneous results, as they are not self-checking.

The best known fluid level instruments are the acid bottle and the SYFO Clinograph. The acid bottle was the first method used for obtaining the deviation from the vertical. It is still being used by a number of companies. A glass bottle partially filled with a 50 per cent solution of hydrofluric acid is either lowered on a measuring line or dropped into the drill pipe and allowed to stand sufficiently long for the acid to etch a line on the glass bottle. The fluid level is, of course, horizontal and from the relationship of this fluid level, which is etched on the glass, and the sides of the bottle the angle at which the bottle was resting when the etching was done may be calculated.

The operation of the acid bottle has a number of disadvantages, which may be enumerated as follows: (1) the acid is dangerous and may cause very bad burns; (2) the bottle is fragile and is easily broken; (3) to obtain a correct reading, it is necessary to place the bottle into a goniometer; (4) the acid bottle is bulky and cannot be readily filed for reference purposes; (5) the etching of the glass takes from 15 to 20 minutes during which time the drill stem has to be at rest; (6) in wells which the drill stem has a tendency to freeze, this method cannot be used.

The SYFO Clinograph (Figure 1) is an instrument which, like the acid bottle, uses the fluid level to obtain the vertical angle. This instrument, however, uses, instead of acid, a harmless dye solution which is in no way injurious. By the use of a siphon, the fluid is delivered into a recording chamber, and after staining a paper chart in this recording chamber the fluid is removed by a second siphon. This paper chart (Figure 2) which is placed in the recording chamber, forms a cylinder lining the chamber and when removed and flattened out it shows a wavy curve as though an acid bottle had been cut and flattened out. By the use of a tangent scale the vertical angle may be read directly. As an aid to quick reading, the charts are ruled so that to obtain the correct vertical angle it is only necessary to count the number of horizontal lines between the high and low points on the curve.

The SYFO Clinograph in obtaining its records, uses the same physical law as the acid bottle. It is impossible to secure with it, an incorrect reading without being aware of it, as fluid must

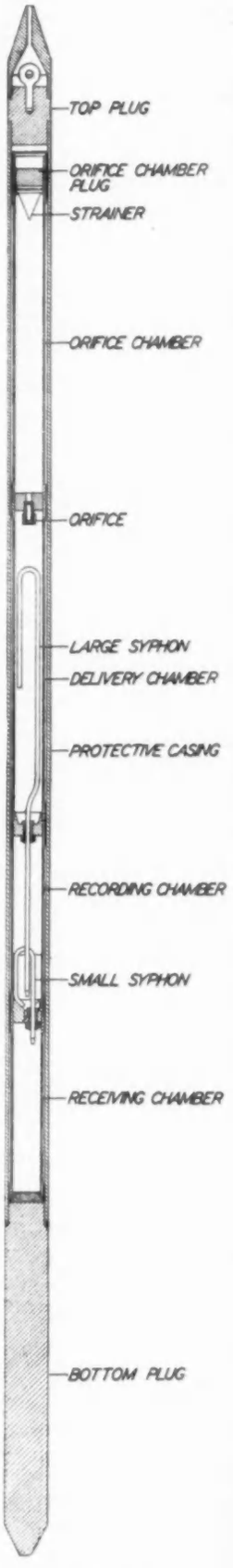


FIGURE 1
Cross section of Syfo Clinograph.

seek its level. Due to the use of a prepared paper sheet and a harmless ink, it gives a direct reading vertical angle, without computations, almost instantaneously, without any danger, and with greater accuracy than the acid bottle, the demarcation line on the paper being sharper than the etching of the acid bottle. The test can be completed with less delay in drilling time. The record, being on paper, can be kept for reference purposes in a limited filing space. The SYFO Clinograph is made of non-corrosive metal and has no moving parts; it will therefore last several years without impaired efficiency. The cost of operation is less than that of the acid bottle.

Directional Well Surveying Instruments

There are three methods which have been used in obtaining the direction of the vertical deviation. These are magnetic compass, drill stem orientation and gyroscopic compass.

Magnetic Compass Method:

The magnetic compass method is subject to errors which cannot be eliminated or corrected, as the instrument when lowered on the drill stem is at the pole of a magnetic field brought about by the magnetized drill pipe. This field increases in intensity as the pipe is lowered, and the length of the magnet, which is the length of the drill pipe, increases. The presence of magnetic material such as pyrites of iron might cause errors. Recognizing the limits of this type of instrument, even its strongest advocates admit that a magnetic compass survey in a cased hole is inaccurate.

Oriented drill Stem Method:

With this method, changes of the azimuth from point to point

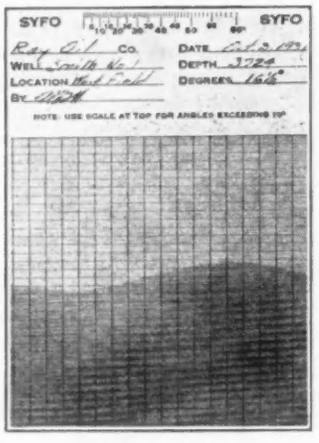


FIGURE 2
Syfo — Chart

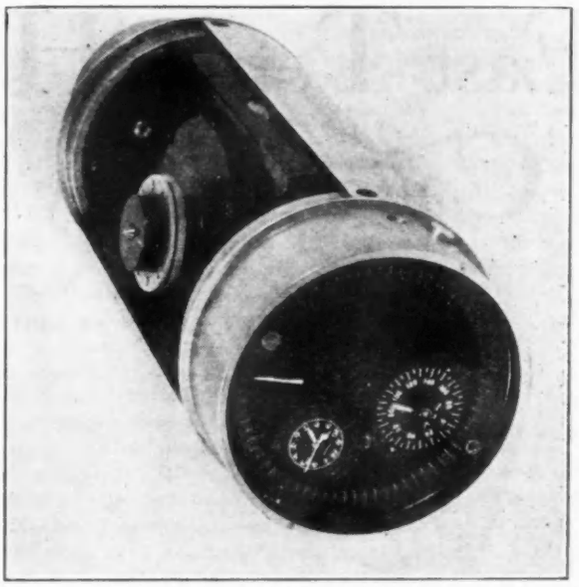


FIGURE 3
Gyroscope, showing watch, thermometer and north pointer.

are determined. Since these changes are added together, a very high order of precision must be used in measuring. Errors are accumulative. The accuracy of directional surveys made by the oriented drill stem method is a much discussed problem. The point of discussion is whether or not the torque in the pipe or in the course of the well cause errors between the orientation as shown on the surface and the true orientation down in the well. There is also the effect of tortuosity if the deviation of the well is not in one vertical plane. Tortuosity cannot be measured and in many cases this effect is of sufficient importance to make the results of directional surveys by this method questionable.

Surwel Gyroscopic Method:

The application of a gyroscopic compass to well surveying has been under development for a number of years, but has been available to the oil industry approximately two years. The gyroscopic compass, due to its reliability and greater accuracy, has been in use for many years in marine navigation, and has replaced the magnetic compass on the majority of the larger ships. The gyroscopic compass used in marine navigation is "meridian seeking." While this type of compass is practical in well surveying, its use in bore holes is limited to larger diameter holes and to rather small angles of inclination. To overcome these limitations, the Sperry Gyroscope Company developed a gyroscopic directional indicator which maintains its orientation (the gyro being compensated for the earth's rotation) very accurately for a number of hours. This type of gyro is very practicable for use in well surveying, as any small residual precession can be distributed uniformly with time as the rate of precession is practically constant. This is the type of gyroscopic directional finder used in the Surwel Clinograph.

Description of Surwel Instrument

The Surwel Clinograph consists of three units, the gyroscope as the lower unit, above this the camera unit, and on top, the inclination unit.

The gyroscope (Figure 3), operated about 10,000 revolutions per minute, is motor driven, the rotor of the instrument acting as the commutator of the motor. This gyroscope is balanced in such a manner that when its axis is placed in the north-south plane it will maintain that orientation for a considerable length of time. On the face at the top of the gyroscope case is a pointer parellel to and controlled by the axis of the gyroscope. A non-magnetic watch, with a sweeping second hand, and a dial-thermometer are also attached to this face. The watch shows

the exact time to a fraction of a second when each picture is taken, and the thermometer gives the temperature within the Surwel case at each picture.

The camera unit (Figure 4) is of peculiar and original design in that it has two lenses and records pictures simultaneously in opposite directions. The lower lens photographs the face of the gyroscope showing the pointer, the watch and the thermometer. The top lens at the same time photographs the bubble in the inclination unit. The two pictures taken at the same instant are superimposed on the same film. This enables the operator to read from each picture both the inclination and the direction.

The camera uses the 16 mm. motion picture film and its capacity is 50 feet, sufficient for 1000 pictures. The movement of the film is supplied by a Geneva movement, operated by a small motor. This motor also operates an adjustable contact device, which provides the necessary light flashes for taking the pictures. The operation of the camera motor is controlled by a timing mechanism which is very accurate.

The inclination unit (Figure 5) is a box level gauge made of specially ground glass. The top is spherical and has concentric circular graduations. The position of the bubble with relation to these graduations shows the exact amount of vertical inclination. Levels which show maximums of 10, 20, 40 and 55 degrees are provided for each instrument, thus assuring the greatest possible accuracy. The gauge selected for use is one the maximum angle of which is larger than the greatest vertical deviation of the hole as shown by the Syfo. The fluid used and the size of the bubble are such that there is no lag in the bubble. Each box level gauge is equipped with an expansion coil which takes care of the contraction and expansion due to heat changes, without any change in the size or activity of the bubble.

These three units which make up the complete Surwel instrument are inserted into the top section of a high pressure steel protective casing. This protective casing is made up of three sections. The two lower sections are used to carry the dry cells which make up the power plant for the operation of the Surwel instrument. The instrument itself, as previously stated, is carried in the top section.

Operation of Surwel Instrument

The operation of the instrument is as follows:

The two lower joints of the protective casing into which have been placed the necessary dry cells are inserted into the well and allowed to rest on slips. The top joint of the protective casing is then picked up. If the survey is to be made on a wire line, a rope socket and swivel is attached to the top of this third section; if a drill stem survey, a sub with circulation holes, and threaded to fit the drill stem tool joint, is attached.

The gyro, which has been run until thoroughly warmed, is connected to the dry cell power plant and set on a

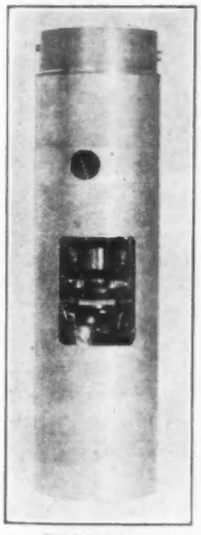


FIGURE 4
View of camera in shell

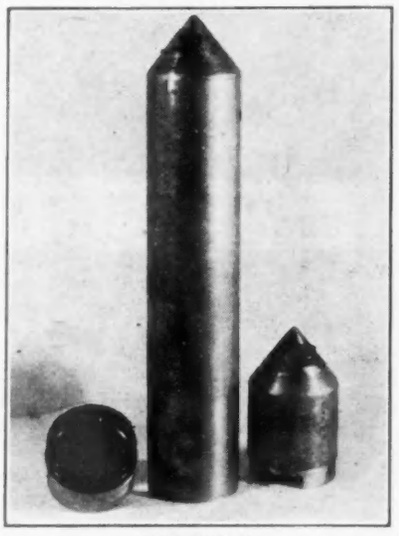


FIGURE 5
Two views of bubble unit, one of shell and one showing bubble case itself with concentric circular graduations shown.

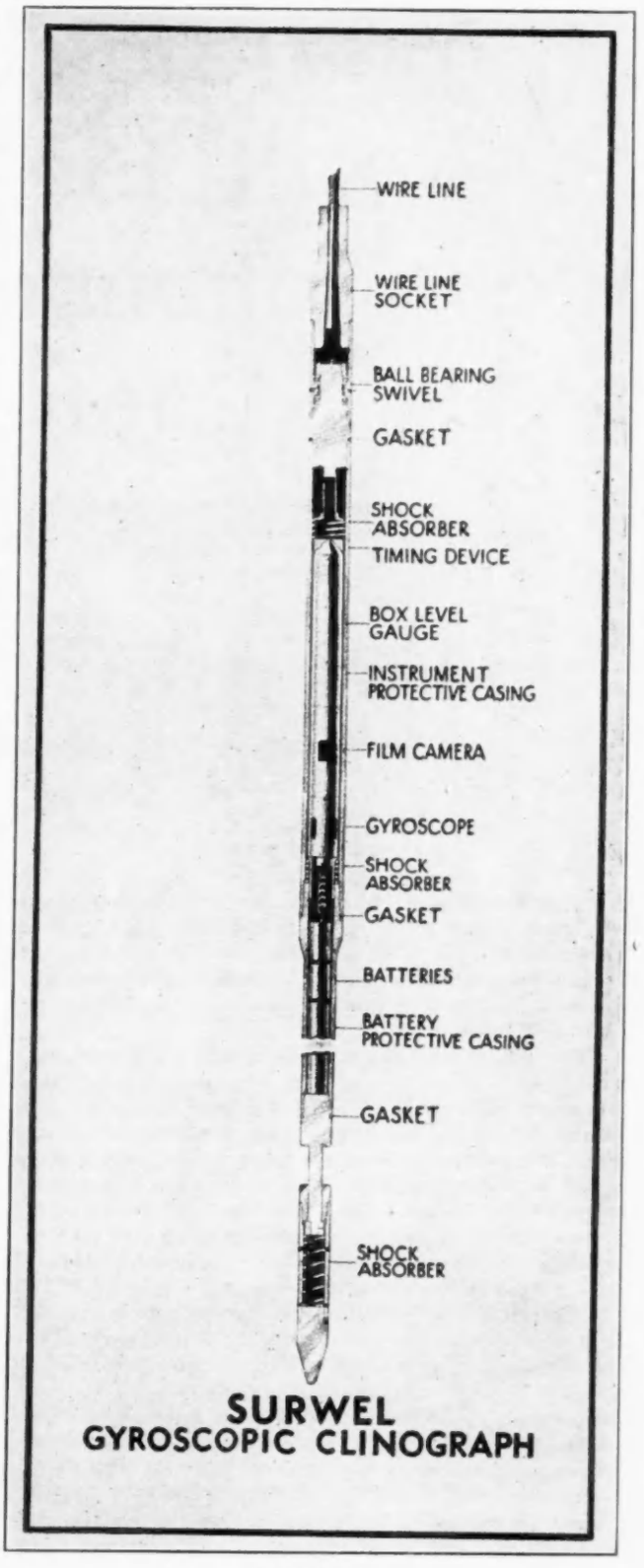


FIGURE 6
Cross section of complete Surwel Unit.

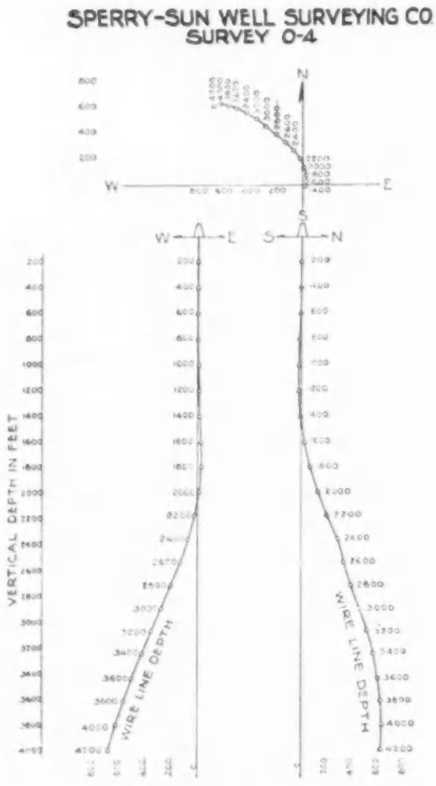


FIGURE 7
Projection of well.

spring cushioned shock absorber sleeve at the top of the two lower joints of the protective casing. The gyro is oriented to the north, or any other desired direction, and the camera and bubble units placed on top of the gyro. The third joint of the protective casing is lowered over the instrument and screwed up tight.

The instrument (Figure 6) is now ready for the survey. If lowered on a wire line, time readings are taken on a watch at the surface, which has been synchronized at the start of the survey with the watch on the face of the gyro. These time readings are taken at the surface every 25 feet as the instrument is lowered into the hole and returned to the surface. Thus from this time-depth record the exact depth of the instrument at the time of each observation can be determined. The instrument is lowered into the hole at approximately 150 feet per minute.

If the instrument is lowered on the drill stem, a special timing device is attached to the top of the instrument which controls the camera motor so that pictures are taken at intervals of one and one-quarter minutes. The average time necessary to lower each fourble of drill stem is about one and on quarter minute; therefore, by using the one and one-quarter time, pictures are procured when the drill stem is at rest, both going into and coming out of the hole.

Upon the return of the instrument to the surface, it is disassembled, and the film removed and developed. On the film are shown the vertical inclination, the orientation and the time (also temperature). From these data on the film a map of the course of the well is plotted. This map (Figure 7) is in three projections, one in the vertical plane, one in the north-south plane and one in the east-west plane. From these projections, the exact location of any point in the well may be readily obtained.

Conclusion

The numerous crooked holes in East Texas, where the pay is shallow and drilling conditions almost ideal, should prove to all operators that "hurry up" drilling methods are expensive and unwarranted.

When wells drilling in soft formation on flat dipping strata go from 10 to 50 degrees off the vertical at depths under 3500 feet, it is obvious that the drilling methods are wrong. The drilling time saved by "hurry up" methods is negligible when the time lost due to unnecessary fishing jobs, plugging back hole, and the loss of production from shut-down time caused from crooked holes, is considered.

No operator should drill or allow to be drilled a single well without using the care necessary to keep the well straight, and to be sure the well is straight a daily check of the verticality of the well should be made. When the well is near the sand, a directional survey should be made which not only shows the amount off the vertical but also the direction of this variation, to show the exact location of the bottom of the hole. This applies particularly to wells of greater depth, even if they have been drilled with extreme care. Few operators realize how serious even a small deflection from the vertical may be.

A hole of 5000 feet depth, with an average deflection of three degrees, which in most fields would be considered reasonably straight, may have drifted at the bottom 262 feet, and the bottom of the well may be anywhere in a circle the diameter of which is 534 feet. The area of this circle would be about 215,000 square feet, or about five acres.

Due to the wandering of the bottom of the hole, drainage areas of carefully spaced wells may overlap, and several wells may draw from the same drainage area. If, however, each well is directionally surveyed after completion, and the spacing is arranged in accordance with the exact position of the bottom of the well as found by the survey, a much more efficient production is obtained.

It pays to have a directional survey made with a reliable instrument before turning the well over to production.

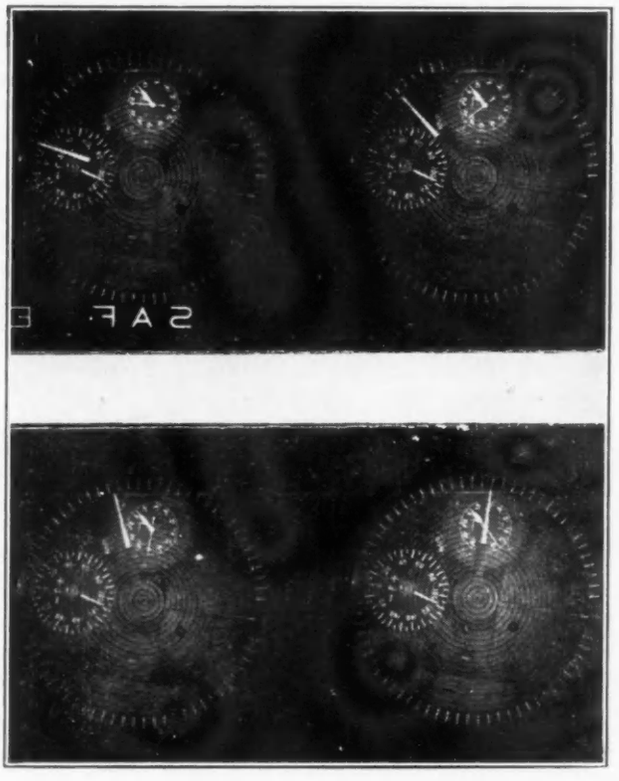
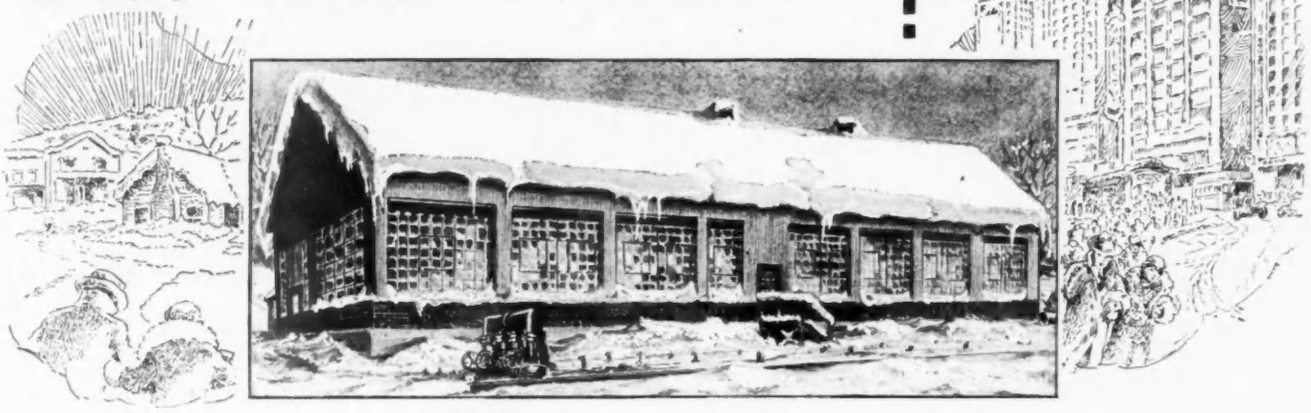


FIGURE 8
Enlarged sample of film.

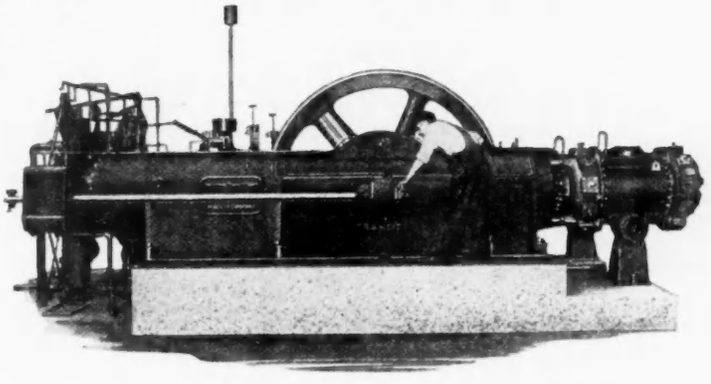
Will Your Compressing Equipment Meet the Increased Demand for Gas this Winter ?



WITH the demand for natural gas increasing each year together with the great number of domestic gas appliances which are being sold, many natural gas companies find that during the winter months their compressing equipment is being taxed to the limit. During the severe cold spells, this often causes a gas shortage due to the lack of modern compressing equipment

Gas shortages during the winter mean not only a hardship to the consumer but also a loss to the producer as well.

If you figure that you will need more gas compressing equipment this winter, remember that TRANSIT has in stock now, ready for prompt shipment, a few 17 x 24" Four Cycle, 200 H. P. Gas Engine Compressors complete with TRANSIT Compressor Equipment.



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FIELD PUMPS
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Welding Field Storage Tanks

Paper read before September 24-25, 1931, meeting of the Southwestern District of the A.P.I. Division of Production, Lufkin, Texas

By EDWARD E. DILLMAN
Engineer, Wyatt Metal & Boiler Works, Dallas, Texas

THE welding of tanks is not a new method of construction, but the application of welding to the building of tanks as large as 80,000 barrels in capacity in which all seams are welded and all rivets are eliminated is new.

It is only as costs are reduced that a new process of manufacture is accepted. To date approximately one million barrels of welded storage has been manufactured in accordance with the process described in this paper.

The purpose here is to show how the tanks are fitted together with a minimum amount of shop work; how expansion and contraction so inherent to all welded structures was solved and how the basic data for design were determined. In presenting this information it will become apparent that lower material costs are obtained; that shop costs are lowered appreciably; and it is hoped the statement that lower field costs are secured will suffice.

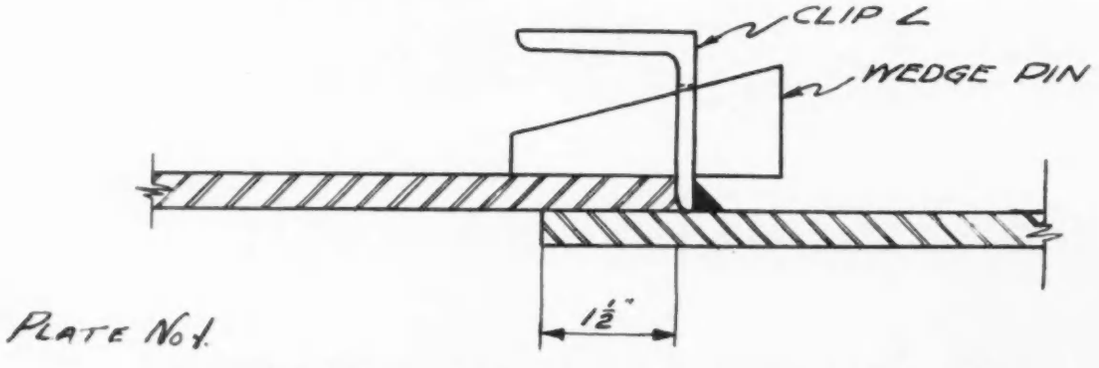
The first problem was to find a method of holding the plates together by means of which mill-run plates could be used without additional shop work. Stitch rivets or fitting-up bolts could not be used because shop work consisting of punching and lay-out work would be required.

In order to meet these conditions a clip angle and wedge pin was devised. (See Slides Numbers 1 and 2). The clip angles are temporarily welded on each plate at approximately 24-inch centers. By gauging from the top and ends of each plate the clip angles are so placed that they maintain the lap and allow the lap to vary within the limits that the respective plates may be out of square. This feature is of primary importance as plates ordered from the mill without specifying that they be resquared will vary in width and length and the sides of the plates will not be parallel. Resquaring of the plates adds an additional cost to the base price of the steel. This operation would also result in a delay in shipment, as the mills must undertake additional work.

Having solved the initial problem of fit-up, the next question was to design the joints and to determine the safe ultimate stresses for these joints. The unit stresses in the shell were determined by means of the standard formula $T = \frac{2.6 \times H \times D}{E \times S}$. The height and diameter being known and accepting the almost universal practice of 22,000 pounds per square inch as the allowable stress (s), the only undetermined value was the efficiency (e). The efficiency of welded joint depends on the type and design.

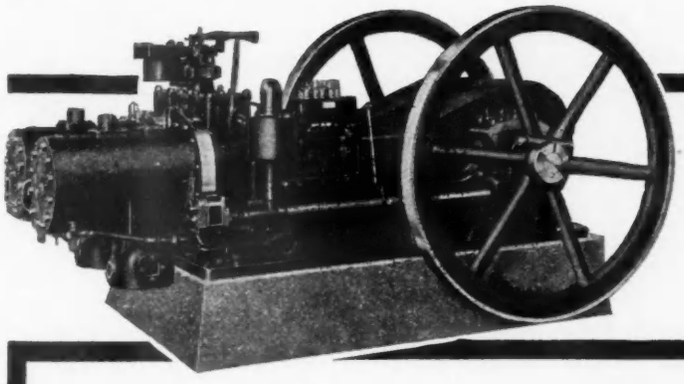
Two types of joints are being used, the type used depending on the amount of stress carried. Plates heavier in weight than 20.4 pounds per square foot (one-half inch) are designed for a buttwelded, butt-strapped joint with inside and outside butt straps; this applies only on the vertical seams which in all cases carry the greatest stress. (See Slide Number 3.) Plates lighter in weight than 20.4 pounds per square foot are designed for a lap-welded joint. (See Slide Number 4.)

There is a difference in the amount of welding on the lap-welded joints although the butt-strapped joint is always designed for the same amount of welding. The variance in welding specifications on the lap welded joint is caused by the fact that the lap joint is used at points of virtually no stress. Where the vertical seams in the shell are under the maximum allowable stress, the lap-welded seams are welded continuously on both sides, our specifications require a full forty-five degree fillet weld. The bottom plates which



SECTION PERPENDICULAR TO JOINT

POWER!
FOR DEEP WELL PUMPING



Superior 90 H. P. Two Cycle, Twin Cylinder Gas Engine. With all bearings in dust-proof and oil-tight housings, its flexibility, smoothness and dependability make it an ideal prime mover for band wheel power service.

National 15C Band Wheel Power renders long, continuous, economical and dependable service by virtue of its simple design, rugged construction and fully enclosed flood oiling system.

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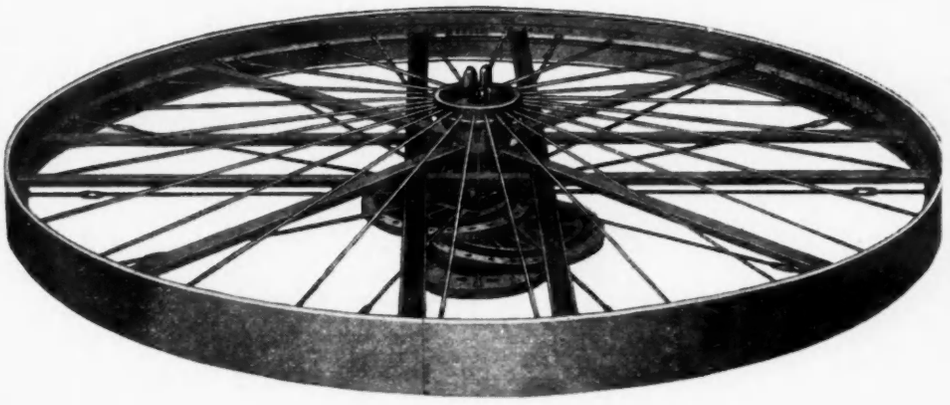

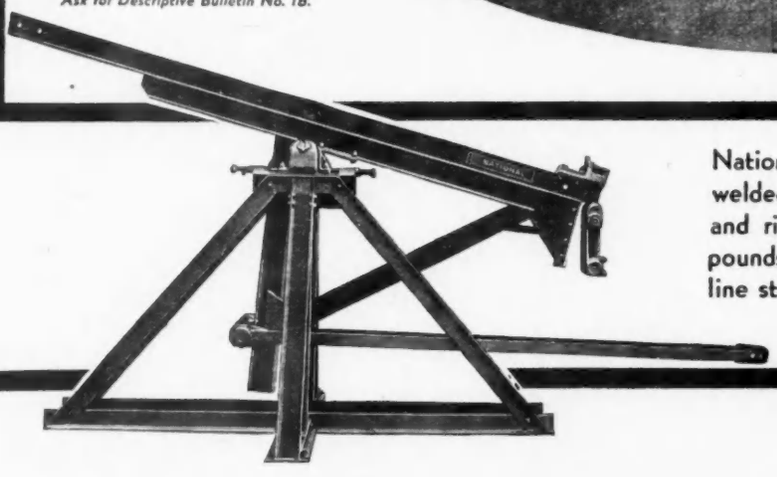

National Type C-130 Pumping Jack is of welded steel construction, exceptionally strong and rigid. Rated polished rod load, 13,000 pounds; rated length of approximately straight line stroke, 48 inches.

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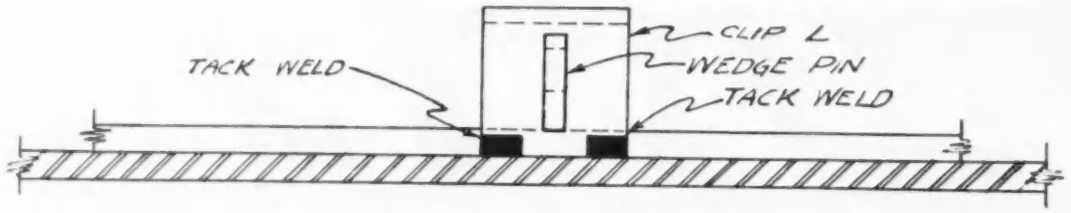


SECTION PARALLEL TO JOINT

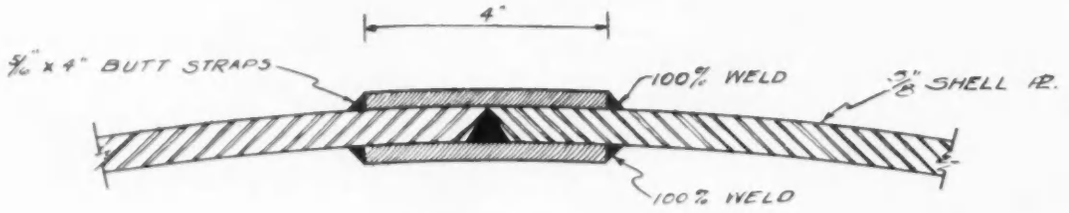
PLATE No. 2.

are also lap-joint construction are welded with a full fillet weld on the inside. The roof seams are of lap-joint construction and are full fillet welded on the outside. Girth seams are lap-welded continuously on the outside and also tackwelded with two-inch tacks every six inches on the inside.

Efficiency Based on Tests

The efficiency used on the above type of joints was based primarily on the results of tests made at frequent intervals in recent years. Tensile tests have demonstrated that the parent metal will fail in specimens of the butt-welded, butt-strapped type of joint, as well as the lap-welded type of joint when welded full on each edge. Due, however, to temperature and eccentricity on the lap-welded joint 90 per cent efficiency was used. For the butt-strap joint, in view of the fact that the eccentricity of the joint was eliminated, 92 per cent efficiency was established as a design value. These values have been demonstrated as being well within the results secured from test specimens made under field conditions. (See Tables I and II.)

Accepting the above efficiencies as a basis for design, the difficulty of making an acceptable choice of plate thicknesses was one of the main problems. Very naturally the experiences gained in the use and construction of riveted tanks influenced everyone interested. As an example of the differences encountered, the usual 80,000-barrel tank of riveted construction has a top ring varying in weight from 7.65 pounds per square foot to 10.2 pounds per square foot. The difference in thickness depends on whether a one-sixteenth-inch or one-eighth-inch corrosion allowance is used and also on the fact that a tighter tank can be secured from plates heavier than 7.65 pounds per square foot. When welding tanks, plate thicknesses within welding limits do not affect the tightness of the tanks. The minimum welding limit is approximately 4.5 pounds per square foot. In a welded 80,000-barrel tank it was found that allowing 1/16 inch for corrosion plates weighing seven pounds per square foot could be used in the top ring and allowing one-eighth inch for corrosion plates weighing 9.5 pounds per square foot were satisfactory. In either case a



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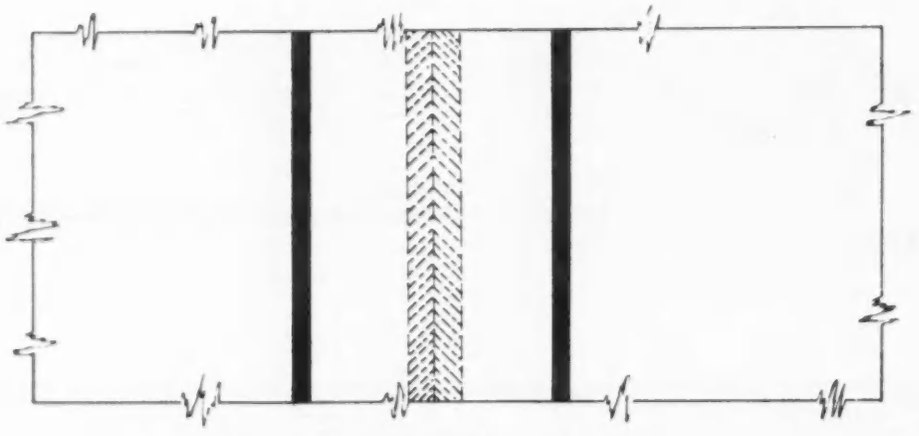
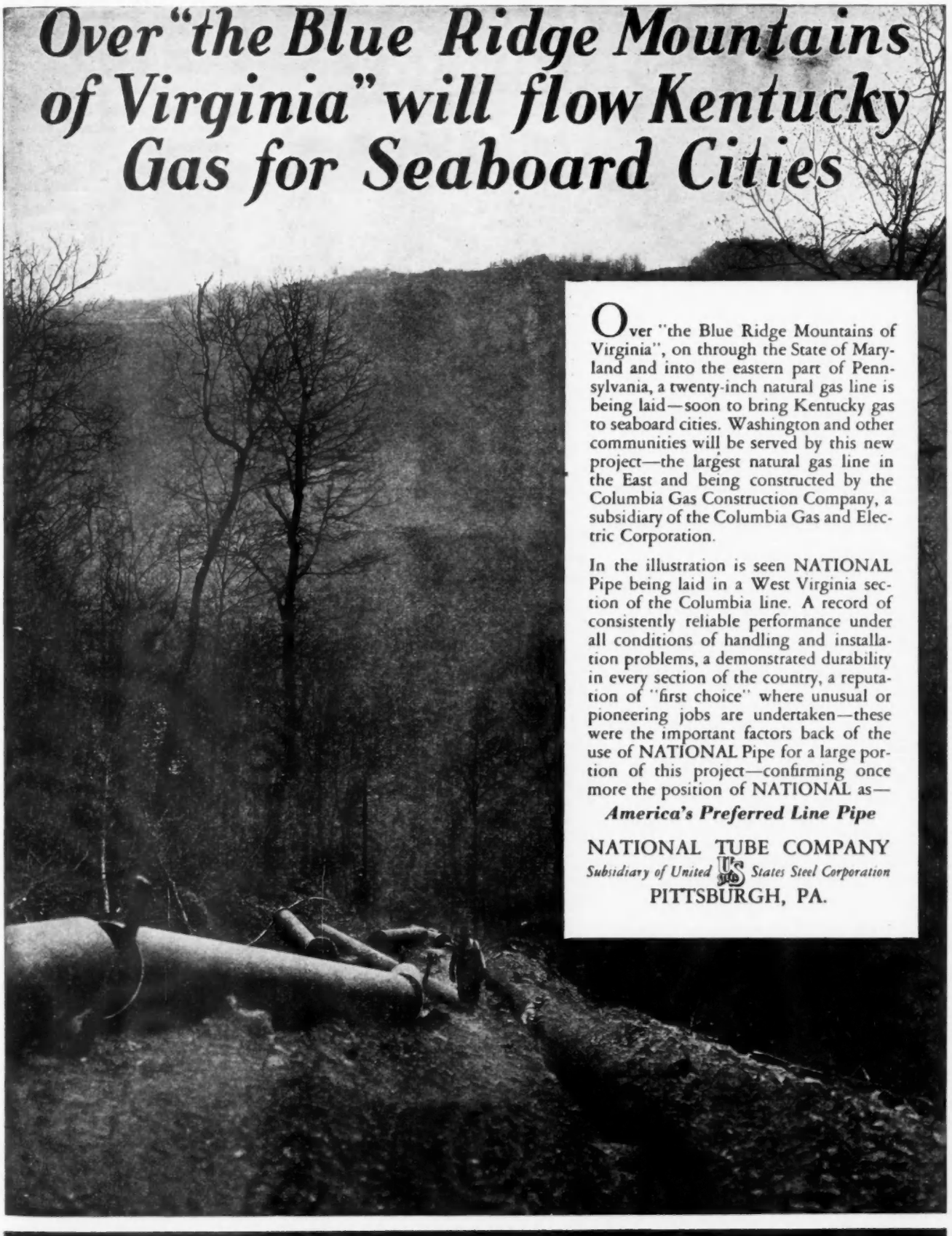


INSIDE ELEVATION OF JOINT

DETAIL OF VERTICAL SEAM IN FIRST RING

PLATE No. 3

Over "the Blue Ridge Mountains of Virginia" will flow Kentucky Gas for Seaboard Cities



Over "the Blue Ridge Mountains of Virginia", on through the State of Maryland and into the eastern part of Pennsylvania, a twenty-inch natural gas line is being laid—soon to bring Kentucky gas to seaboard cities. Washington and other communities will be served by this new project—the largest natural gas line in the East and being constructed by the Columbia Gas Construction Company, a subsidiary of the Columbia Gas and Electric Corporation.

In the illustration is seen NATIONAL Pipe being laid in a West Virginia section of the Columbia line. A record of consistently reliable performance under all conditions of handling and installation problems, a demonstrated durability in every section of the country, a reputation of "first choice" where unusual or pioneering jobs are undertaken—these were the important factors back of the use of NATIONAL Pipe for a large portion of this project—confirming once more the position of NATIONAL as—

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NATIONAL TUBE COMPANY
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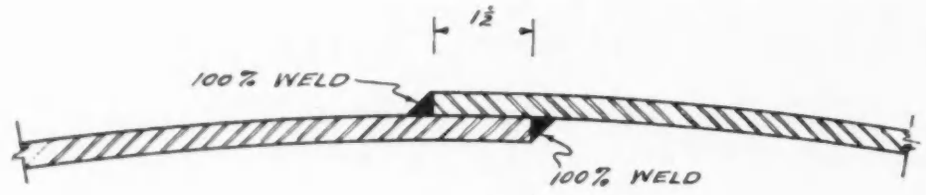

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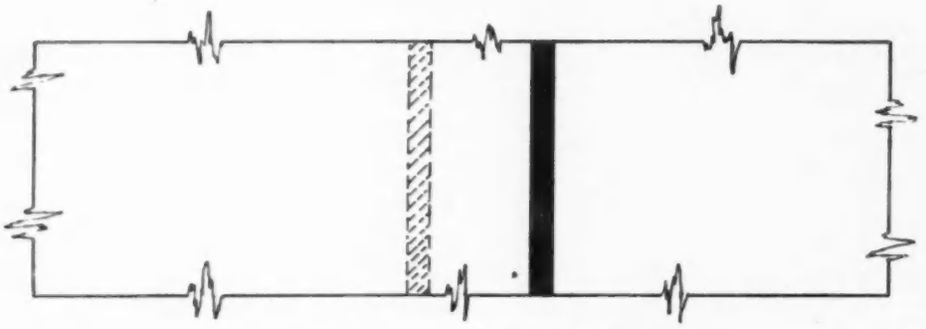

INSIDE ELEVATION OF JOINT

TYPICAL VERTICAL SEAM IN SHELL

PLATE NO 4

saving in material of about 8½ per cent was effected. This saving, however, did not apply to some of the lower rings, particularly the first and second. It is apparent that a saving in material is available to users of welded tanks, assuming that they require the same corrosion allowances on welded tanks that they do on the riveted tanks.

The method of fit-up having been worked out, and the joints designed and plate thicknesses decided upon, it was then necessary to work out a satisfactory welding procedure. Contraction and expansion of welded structures while under-going the welding process require careful control of construction methods. Slight changes from the design and construction of the riveted tanks were made. These changes enable the fullest advantages to accrue to the user of the welded tank.

The first change from the standard riveted tank design of shell construction, other than elimination of the rivets, was the placing of the shell plate inside of the upstanding leg of the bottom angle (See Slide Number 5). This type of bottom angle construction is different from the A. P. I. recommendation on welded bottoms. The next change was using lap welds under the bottom angle instead of cutting back the lap and butt-welding the bottom plates under the bottom angle. (This change was made before the experience of the Engineers of Standard Oil Company of California had been called to our attention, which is reproduced in Supplement No. 2 to A. P. I. Stds. No. 12-A.)

The change in the bottom angle construction aided materially in the fit-up of the tanks and saved some additional plate. Finally the continuous inside weld on the bottom angle (previously recommended by the A. P. I. and now superseded by later recommendations) was discarded and a 25 per cent weld used.

Two Plans Tried

The procedure to be followed in welding the bottom was next to be determined. Two plans were tried. The first plan was to back-step the seams on the bottom, first tacking the bottom securely, and then welding from the edges to the center seam. After the bottom was completely welded, the bottom angle was placed and tacked into position and then welded continuously. This method was a complete failure as buckles appeared all over the bottom, due to the contraction of the bottom angle as it was welded.

As a result the following procedure, a second plan was worked out for the smaller tanks. The bottom is first laid on the grade and tacked very lightly into position. The position of the bottom angle is then marked and the seams welded from the edge to a point beyond the inside edge of the bottom angle. The bottom angle is then laid and the 25 per cent tack welds are made on the inside of the angle. Adjacent ends of each of the bottom angle segments are left open one-fourth-inch for butt welds, and as an aid to contraction. The first ring is next hung and clipped into position. Welding of the bottom angle to the shell and to the bottom is then carried on simultaneously. All welding on the vertical seams is done after each succeeding girth seam has been completed. The welding on the vertical seams is done from the welded girth seam to the top of each plate. Having completed all the welding on the first ring the bottom is then ready to weld. Work is started at the sketch plates at right angles to the main center seam and carried toward the center seam from each side. As slight buckles appear during the welding of the bottom, bottom angle and first ring, the light tacks are broken and the plates laid flat.

The only difference between this procedure and that used on large storage tanks is that in the latter case, the center rectangular plates are welded as a unit. After all welding is completed on the first ring, the sketch plates are tied into the center rectangular section. As a result the difference between the major diameter and the minor diameter is only seven-eighths-inch on an 80,000-barrel tank. (See Slide No. 6.)

On the remainder of the shell the rings are clipped into position, the vertical seams being lightly fastened. The girth seam is welded continuously on the outside, and the vertical seams then trued and welded. Later the tack welds on the inside of the girth seams are made. It is interesting to note that the maximum stress on a girth seam weld is a shearing stress of approximately 100 pounds per linear inch.

As to the amount of work done in the shop—this varies with the size and weight of the tanks. Plates heavier than 12.75 pounds per square foot are rolled. The shell plates in which the butt-welded butt-strap joint is to be used are edge-planed for a 60° butt-weld. Roof and bottom angles are rolled and trued up in the shop. Roof structurals consisting of center post and center square are fabricated in the shop. The remaining room structurals

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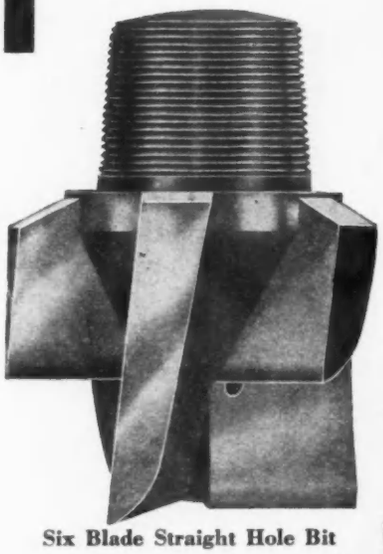
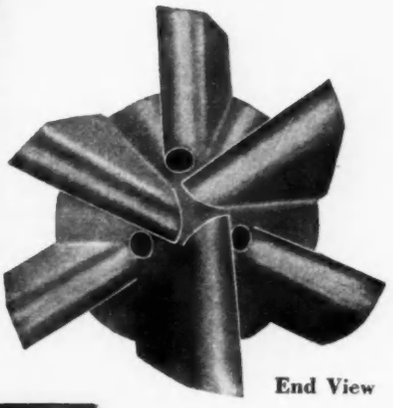


Six Blade Straight Hole Bit

Pat. Pending 438542



End View

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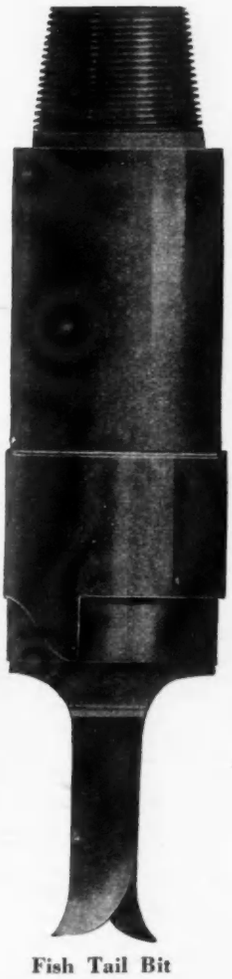

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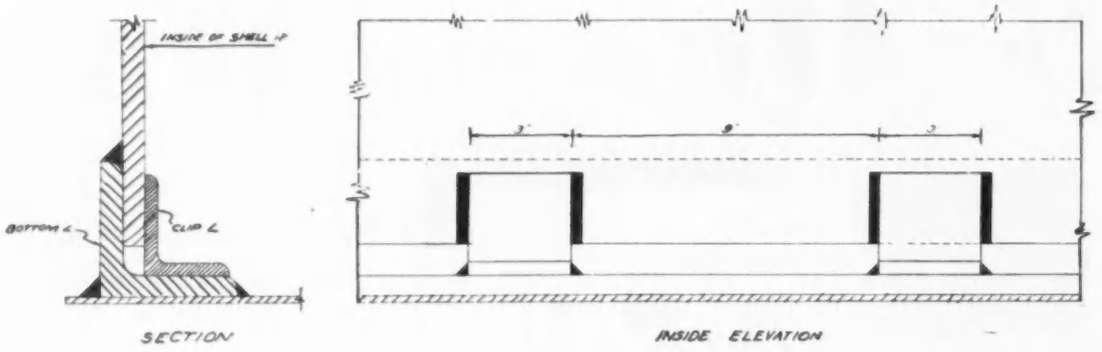


DETAIL OF BOTTOM ANGLE CONNECTION

PLATE NO 2

may be brought direct to the work from the mill or fabricated in the shop, depending on the time factor and location of the work. The remaining shop work consists of small fittings such as flanges, manhole frames and covers, and stairways or ladders, if required.

The fit-up having been successfully applied and the welding control and construction methods having been proved, it was necessary to be certain that the strength used in design was actually obtained in the field. Needless to say, all efforts were directed towards securing the full strength of the joint, before the first plate was ordered from the mill. These efforts centered on qualification of the welders, careful supervision of the work after the welders were qualified, and the use of the proper size and most efficient welding machines.

Past experience had taught that the valve of the finished weld depended a great deal upon the condition and efficiency of the welding generator. Electric driven machines are preferred whenever power was available.

The steady and stable arc available from electric machines results in smoother and more efficient welding. Another important factor is to use machines of ample size. As the greatest plate thickness anticipated was one inch, four hundred ampere machines were considered ample. This size machine would be required only on a small portion of the work, although it would be available throughout any particular job.

Four hundred ampere direct connected motor-generator sets were used, with stub shaft for connecting to gasoline units if necessary. The largest number of machines used on any group of tanks was nine of the size just described. These nine machines completed 16 tanks aggregating 200,-600 barrels in 45 days.

Qualifications Set Up

The following qualifications were set up to test the ability of welders:

All welders are required to pass a qualification test. These test sections are to be made in the following manner and under the conditions as specified.

BUTT WELDS—Two best samples are to be made from four pieces of plate one-half by four-inch by eight-inches The plates are to be beveled sheared at 30° for a single vee. The test specimen after welding is to be four-inch by 16-inches and is to be clearly marked with the welder's name and identification numbers. The test specimens are to be shipped immediately to Dallas for testing and approval of the welder that made the specimen.

Each test specimen is to be machined so that the joint is reduced to the thickness of the base metal. A two-inch tensile test specimen is to be cut from each sample plate

TABLE 1

Results of Tests Made on Joints Welded Under Field Conditions

Type of Joint	Gross Load	Load Per. Sq. Inch	Break
Lap Joint Welded Both Edges	54,160	60,200	Parent Metal
" " " " "	52,340	58,100	" "
" " " " "	56,400	62,700	" "
" " " " "	52,000	57,750	" "
" " " " "	53,370	59,200	" "
" " " " "	54,610	60,800	" "
" " " " "	49,100	54,650	" "
" " " " "	52,380	58,700	" "
" " " " "	55,150	61,300	" "
Butt Welded Butt Strap	52,900	54,400	Edge of Weld
" " " "	58,900	61,500	Parent Metal
" " " "	56,100	59,000	Edge of Weld
" " " "	58,650	61,600	Parent Metal
" " " "	57,200	60,200	Parent Metal

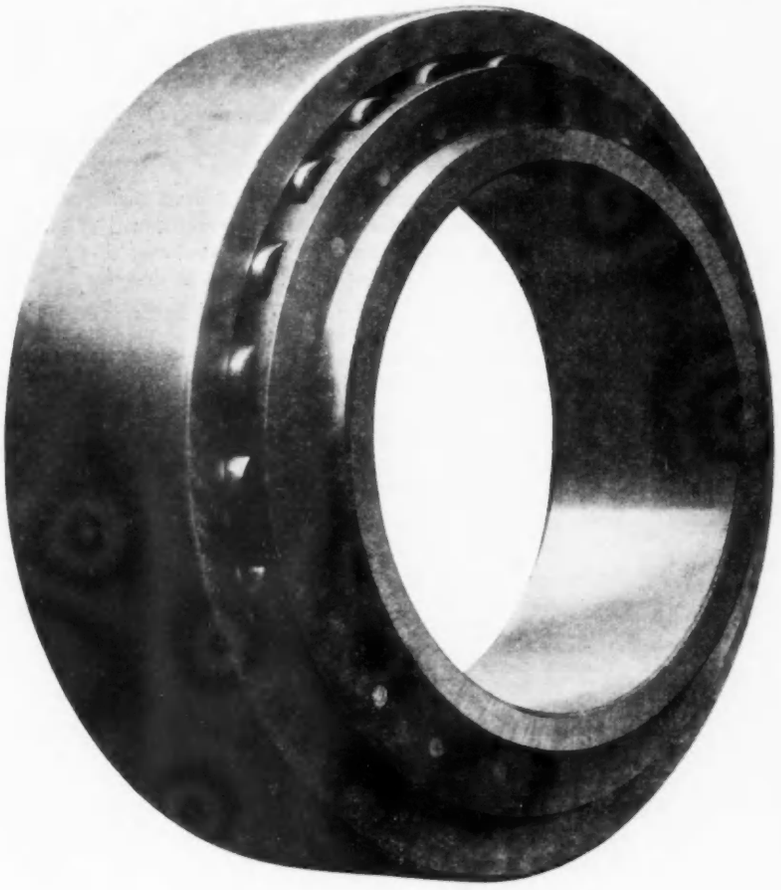
Note: All tests were made by independent laboratories.

TABLE II

Results of Tests Made on Several Different Types of Joints —Experimental Data

Type of Joint	Plate Thickness Inch	Gross Load No.	Load Per Sq. Inch lbs.	Break
Lap-Welded Joint	5/8	136,900	56,200	Parent Metal
"	5/8	137,000	56,800	"
Butt-Welded—Single Strap	5/8	132,000	55,800	"
"	5/8	132,600	55,700	"
"	1/2	108,700	54,000	"
Butt-Welded—Double Strap	5/8	139,100	57,500	"
"	1/2	104,300	54,800	"
*Butt Joint—Double Strap	5/8	107,900	44,500	Failed in Weld
* "	5/8	117,500	48,800	"
* "	5/8	113,200	46,400	"
"	1/2	107,700	53,900	Parent Metal
"	1/2	107,300	54,300	"
"	1/2	107,500	54,700	"

Note:—*Welded at high rate of speed, approximately 24 feet per hour. The last six specimens did not have the butt joint welded. The butt-straps were full fillet welded.
The butt-straps for all specimens were 5/16 inches thick.
All tests were made by independent laboratories.



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and ultimate strength shall not be less than 50,000 pounds per square inch.

LAP WELDS: Four test specimens are to be made from eight pieces of plate one-half by six by nine inches. The nine-inch sides are to be lined up and the six-inch edges are to be made to lap 1½ inches and are to be securely clamped. A full half-inch fillet weld is to be made on one edge of two specimens in the vertical position. A full half-inch fillet weld is to be made on both edges of two specimens in the vertical position. The specimens are to be clearly marked with the welder's name and identification numbers. The test specimens are to be shipped immediately to Dallas for testing and approval of the welder that made the specimen.

Two of the specimens are to be broken and torn apart by wedging at the unwelded six-inch edges and the fractured metal of the specimens broken through the weld must show: bright, dense, even textured, crystalline or fibrous weld metal, irregularly torn and void of irridescent colors, good fusion of weld and base metals; good penetration into right angle corner of the fillet.

Two of the specimens shall be cut into two-inch tensile test specimens and when tested to failure the specimen must fail in the parent metal.

The acceptance of any welder does not place the welder upon a permanent acceptable basis. At other times he will be required to make similar tests and in the event of the rejection of any test specimens he may be removed from the acceptable list of welders.

Welding Specifications

Each welder shall be furnished with a number and a steel die corresponding to this number. The welder shall mark clearly the point at which he starts by means of the numbered die and the end of each weld in like manner. Failure to comply with this requirement, at the discretion of the superintendent, results in his removal from the work.

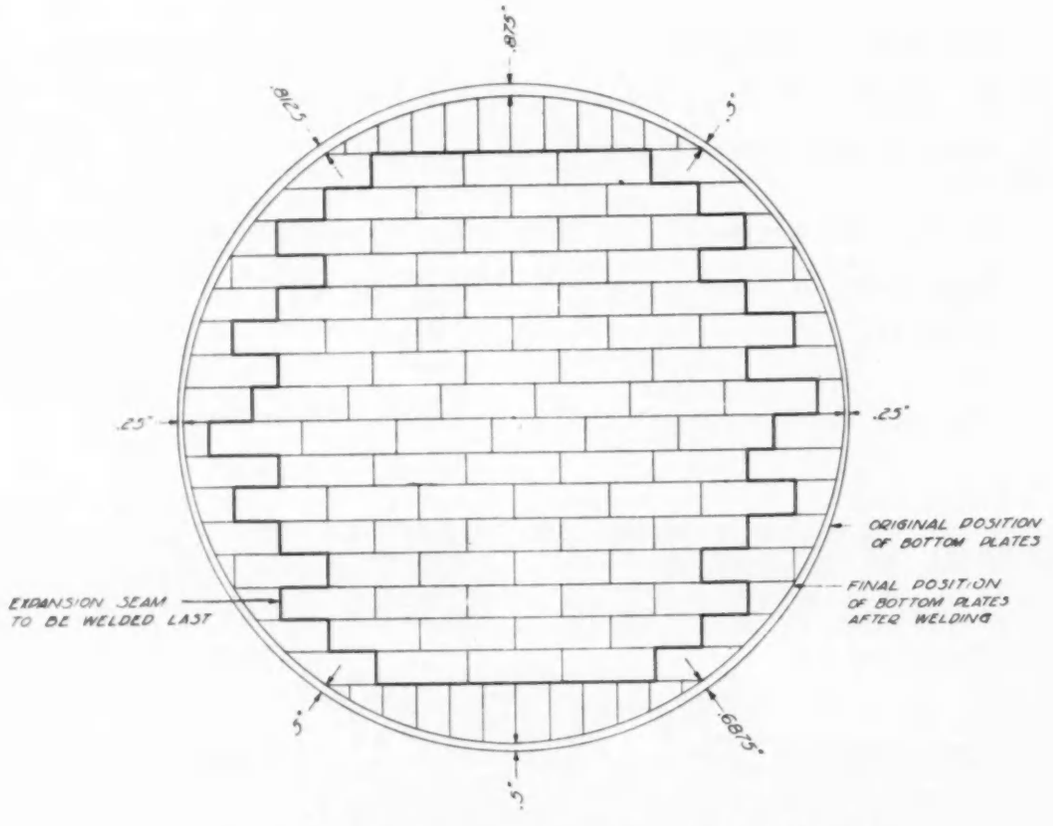
Butt Strap Joint—the edges of base metal of plates transmitting stress through butt joints shall be beveled with a single vee.

The base metal where a single vee is used shall form an open angle of not less than 60° and the joint must be backed up by a plate at least 50 per cent of the thickness of the base metal. The weld for plates one-half-inch to five-eighths-inch thick shall be welded in two layers and the first layer wire brushed and cleaned before the second layer is deposited. The butt straps are to be welded in the same manner that a lap joint is welded (See lap welding specification).

Lap Joints—all joints (lap) or equivalent in one-quarter inch to seven-sixteenths inch steel shall be full fillet welded in one layer; one-half inch to eleven-sixteenths inch in two layers, and three-quarter inch to one inch in three layers. The cross section of the fillet shall be as near as practicable to a triangle with equal sides and the hypotenuse at 45° to 90° sides.

All metal where it is deposited in two layers shall have each layer wire brushed or otherwise cleaned before subsequent layers are deposited.

Results from these tests show that welders are capable of giving ultimate strengths equal to the 55,000 pound per square inch tensile strength of the plates. The ability to secure this strength in actual practice depends upon the care with which the welds are inspected and the use of the proper welding current. In the final analysis proper equipment begets good welds and care in design of the joint makes it possible to secure greater uniform strength.



BOTTOM OF 117'-6" TANK SHOWING SHRINKAGE DUE TO WELDS

PLATE No. 6.

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"MORE haste, less speed" is an axiom that has been accepted by drillers today as worth following. Not only is more care being taken to hold drilling to the vertical but daily check-ups are the order of the day.

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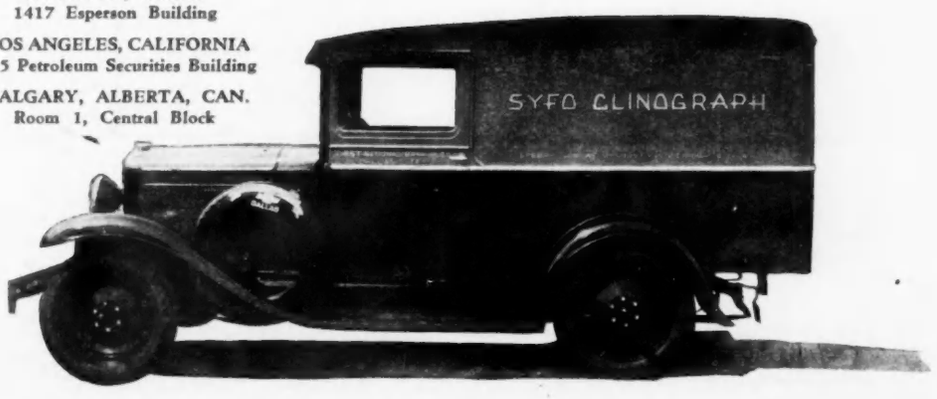

Petroleum Points the Way

When depression came oil was the last great basic industry to feel its effect. Leaders now agree that history will again repeat as the great sixteen billion dollar petroleum industry gives promise of taking the lead in business recovery.

Rapid strides have been made in the past two months.

Co-operation has supplanted cut-throat methods; sound reasoning and sober thinking are once again in command.

Already the rewards are apparent; compare the present condition with a short time ago. Then, unlimited and unnecessary production had forced the price level for crude below 20 cents; markets for refined products were seemingly bottomless.

Today for the first time in the history of the industry production is stabilized on an orderly basis. Refining and marketing have been adjusted in keeping with demands, and the price level of both crude and refined products is on a higher scale, with the trend apparently upward.

Smiles of busy men are replacing scowls and frowns of idleness and despair. Courage and confidence are again overcoming doubt and fear. Petroleum, once again, is pointing the way to a business revival.

CONSUMPTION

The total consumption of crude oil and refined products for the first eight months of 1931 was within 2.7% of the consumption for the corresponding period of 1930 — U. S. Bureau of Mines, report as of September 1, 1931.

STORAGE

The oil industry in its producing, pipeline transportation and refining divisions has approximately 100,000,000 barrels of empty storage facilities — U. S. Bureau of Mines, report as of September 1, 1931.

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Markets • Production • Crude Prices

H. J. STRUTH, ***Staff Economist, Houston, Texas***

Market Strength Warranted But Caution Is Necessary

Higher crude prices have apparently sounded the death knell to depression in the petroleum industry; optimism has pervaded practically all producing areas of the United States. Advances of from 10 to 15 cents a barrel have already been posted throughout the Middle West, Mid-Continent, Gulf Coast and Rocky Mountain area. Canadian crude has also reflected the improved tone of the market by an increase of 10 cents. Belief that the East Texas problem is about to be solved played an important part in the action taken by purchasing companies. The announcements of higher prices, following accord on the principles outlined in the East Texas development program, echo the generally optimistic sentiment of the industry that is undoubtedly warranted by the improved statistical position.

While there is every reason to believe that the industry will profit from the economic lessons of the past two years, it should be borne in mind that higher prices can only be maintained by strict adherence to the economic principles that were the outgrowth of over-production and unprofitable prices. Whether the indicated upturn in the price trend can be maintained depends entirely upon whether or not it will have an unfavorable influence upon the current supply. If the price advance creates laxity in observance of marketable production limitations, it is obvious that present and prospective higher prices cannot be maintained. However, if the industry continues its concerted efforts to prevent over-production, and maintains output in conformity with the economic limits prescribed by the demand, there is every reason to believe that the recent increase in price will constitute the beginning of a definite upward trend that will result in eventual prosperity.

Pending further official action, East Texas operators have apparently concentrated on a drive to drill up all locations previously made. Last week, an all-time record for the industry; a record that has never before been witnessed in any flush field, was chalked up by the drilling activity in East Texas. Well completions there totaled 175, with 173 producing wells, credited with a total initial production of 1,420,550 barrels. In view of pending action to be taken there, it is believed that this record will represent the peak of development for East Texas. A report of drilling permits granted last week shows that there was a decline to 150, compared with 198 in the preceding week. As a result of this large number of producing wells, production of the East Texas field rose rapidly to a total daily average of 446,000 barrels. The average for last week, according to the American Petroleum Institute was officially reported at 417,700 barrels, a gain over the preceding week of 17,400 barrels.

Daily average production of the United States increased 50,000 barrels last week, when the production curve rose to a total of 2,431,250 barrels. Oklahoma production increased 36,550 barrels, while Texas reported a net gain of 13,950 barrels. Other areas reporting increased production were Kansas, 1050 barrels; Gulf Coast, 3900 barrels; Eastern States, 5750 barrels, and Rocky Mountain states 100 barrels. North Louisiana and Arkansas reported a combined decrease in production of 800 barrels, while California's output dropped a total of 11,200 barrels.

A factor that emphasizes the need for caution at this time is the reported running to storage of Oklahoma crude. During the week ending October 31, an average of 23,000 barrels a day was run to storage in Oklahoma, compared with a withdrawal of well over 40,000 barrels a day during the past few months. This reflects the decline in refinery operations and indicates the necessity for producers to trim production schedules to conform with the seasonal decline in crude buying. It is such reversals in trends that create market weakness and cause operators to resort to underselling. Keeping production down to market requirements is more than ever necessary at present since sustained market improvement will be needed to carry the industry into next year with the confidence which now prevails.

Oklahoma Production Set At 544,700 Barrels Daily

Daily production for Oklahoma during November and December was set at 544,700 barrels through an order issued Monday, November 2, by the Oklahoma Corporation Commission. Wells of the state have been divided into three classes, while Oklahoma City is made another division. The classes and allowed production are:

	Potential	Allowable
Class A (stripper wells)	196,463	191,000
Class B	300,000	152,000
Class C	185,641	21,700
Oklahoma City	3,000,000	180,000
		544,700

As in previous orders, proration applies to Class A wells only when wells on a lease produce an average of more than 20 barrels. For all oil in excess of the 20 barrels per well the proration is 50 per cent of the excess. It is explained in the order as follows:

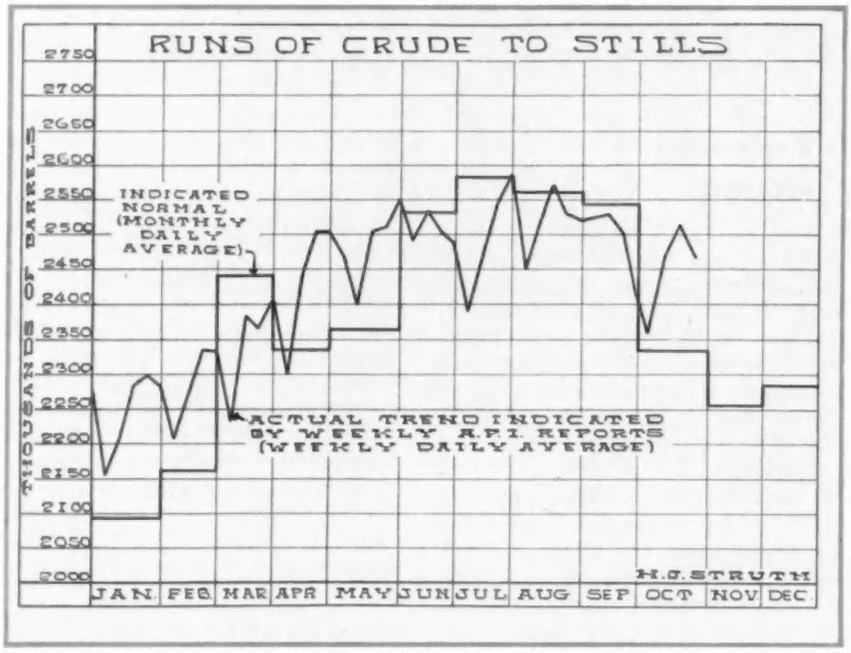
"An 80-acre lease with eight wells thereon which is making a total of 200 barrels per day shall be allowed an exemption of 160 barrels and the remaining 40 barrels shall be cut to 20 barrels so that the total allowable production from the lease as a whole shall be 180 barrels."

The list of Class B wells was increased in the present order by the addition of the following fields, Carr City, South and East Earlsboro, Konawa and Asher Wannette. These pools are added to what formerly was known as Greater Seminole. These fields now have a common market with Seminole and for that reason were considered on a similar basis.

Class C wells are in the following pools: Chandler, Fish, Orlando, West Perry, Township 20 north, Range 4 west, Tatums, Wewoka Townsite and West Seminole.

The greater part of the hearing at Oklahoma City last week was devoted to the Oklahoma City pool. There was a mass of testimony introduced on two points. An effort was made to have this pool put on a unit basis as applied to its four producing zones. The question of allowing

MARKET SECTION



leases to make up production lost during the period when the field was closed down by military law also drew attention.

The order takes no cognizance of the unit proposal, but does provide for an opportunity for producers to make up production lost during the military shut-down. The potential output of the field has been set at 3,000,000 barrels. So the order provides that wells may produce 5.4 per cent of potential. This ratio would give the field daily output of 162,000 barrels. But the market demand was found to be 180,000 barrels, so the difference of 18,000 was given to making up production lost during the military shut-down. This will be on the percentage basis of one-half of one per cent, giving the field total production on a basis 5.9 per cent of the estimated potential.

The order sets up provisions for the taking of potentials in all fields where this is necessary. Parts of the Seminole pool and some of the Oklahoma City pool will be forced to take further potentials.

A committee was named to perform the duties and functions of an umpire. Its members are W. N. Stokes, B. G. Patton and C. O. Rison.

Crude Runs to Stills, Gasoline Stocks and Gas and Fuel Oil Stocks

Week Ending October 24, 1931
(Figures in barrels of 42 gallons)

District	Potential Capacity (Daily) Total	Reporting	Per Cent	Crude Runs to Stills Total	Daily Average	Per c't Operated	Gasoline Stocks (see note below)	Gas & Fuel Oil Stocks
East Coast	633,700	633,700	100.0	3,250,000	464,300	73.3	4,079,000	10,405,000
Appalachian	149,600	137,400	91.8	766,000	109,400	79.6	1,330,000	1,641,000
Ind., Ill., Ky.	436,300	431,500	98.9	2,374,000	339,100	78.6	3,337,000	5,449,000
Okla., Kans., Mo.	485,700	435,200	89.6	1,700.000	242,900	55.8	2,868,000	5,057,000
Texas	838,200	765,400	91.3	3,911,000	558,700	73.0	5,634,000	11,348,000
Louisiana-Arkansas	233,100	230,500	98.9	1,079,000	154,100	66.9	711,000	3,742,000
Rocky Mountain	160,900	143,800	89.4	273,000	39,000	27.1	1,284,000	831,000
California	914,500	888,100	97.1	3,443,000	491,900	55.4	*11,975,000	96,958,000
Total week Oct. 24	3,852,000	3,665,600	95.2	16,796,000	2,399,400	65.5	31,218,000	135,431,000
Total week Oct. 17	3,848,500	3,662,100	95.2	17,095,000	2,442,100	66.7	30,836,000	135,913,000
Total Oct. 25, 1930	3,730,100	3,566,400	95.6	16,397,000	2,342,400	65.7	(a) 35,055,000	139,467,000
The Texas and Louisiana Gulf Coastal figures shown below are included above in the totals of their respective districts.								
Texas Gulf Coast	532,500	531,500	99.8	2,992,000	427,400	80.4	4,229,000	8,058,000
Louisiana Gulf Coast	147,500	147,500	100.0	749,000	107,000	72.5	554,000	2,871,000

Note: In all the refining districts indicated except California, figures in this column represent gasoline stocks at refineries. In *California, they represent the total inventory of finished gasoline and engine distillate held by reporting companies wherever located within continental United States—(stocks at refineries, water terminals and all sales distributing stations, including products in transit thereto).

(a) Revised in Indiana-Illinois district, due to transfer to "Bulk Terminals" of stocks previously reported as "At Refineries."

MARKET SECTION

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH NECESSARY AND NORMAL QUOTA LIMIT

State—	Indicated Demand Fourth Quarter 1931	Economic Limit Fourth Quarter 1931	Daily Average Last Week	Daily Excess Last Week	Daily Average Since January 1	Daily Excess Since January 1†
Arkansas	56,000	50,000	37,750	—12,250	44,284	—10,116
California	500,000	487,500*	496,900	9,400	522,710	29,210
Kansas	113,000	110,000	102,950	—7,050	106,439	—5,561
Louisiana	75,000	60,000	60,750	750	62,988	—7,512
Oklahoma	525,000	546,000*	519,050	—26,950	465,330	—51,170
Texas	860,000	900,000*	993,700	93,700	893,664	134,964
Balance of U. S.	214,000	210,000	220,150	10,150	207,894	—25,881
Totals	2,343,000	2,363,500	2,431,250	67,750	2,303,309	63,934

*Allowable.
†Excess based on allowable to date.

Higher Crude Prices Loom For California Oil Market

Small premiums are being paid in several California fields, but reports of bonuses up to 50 cents per barrel are erroneous. At Playa del Rey, Santa Fe Springs and Long Beach, premiums of varying proportions are reported, due to the elimination of loose crude. If conditions continue to improve, higher crude prices may reasonably be expected.

State production remains low and demands are now exceeding the output. This condition is being reflected in reduction of stocks at a good rate. Production is lower than it has been at this time of year since 1922. Even a year ago it was about 100,000 barrels higher, while two years ago it was more than 300,000 barrels higher.

None of the fields is expected to cause trouble and deep zone production will be held down. Operators at Elwood have agreed to postpone development of the Sespe zone for some time, while Dominguez operations should not

Cracked Gasoline Production

Week Ending October 24, 1931

(Barrels of 42 gallons)

	Potential Charging Capacity Total	Daily Reporting	%	Production Total	Daily Average
East Coast	261,300	236,300	94.0	655,000	93,600
Appalachian	56,300	54,100	96.1	185,000	26,400
Ind., Ill., Ky.	330,400	315,400	95.5	616,000	88,000
Okla., Kans., Mo.	237,800	219,500	92.3	381,000	54,400
Texas	450,800	436,200	96.8	990,000	141,400
Louisiana-Arkansas	112,400	112,400	100.0	239,000	34,200
Rocky Mountain	99,900	98,400	98.5	87,000	12,400
California	190,800	190,800	100.0	269,000	38,400
Total week Oct. 24	1,739,700	1,663,100	95.6	3,422,000	488,800
Total week Oct. 17	1,738,900	1,662,300	95.6	3,438,000	491,100
Total Oct. 25, 1930	1,589,200	1,328,600	83.6	2,588,000	369,700
The Texas and Louisiana Gulf Coastal Figures Shown Below are included above in the totals of their respective districts.					
Texas Gulf Coast	352,400	347,400	98.6	794,000	113,400
Louisiana Gulf Coast	77,000	77,000	100.0	185,000	26,400

Imports of Petroleum at Principal United States Ports

(Barrels of 42 Gallons)

	Week Ended Oct. 24	Week Ended Oct. 17
AT ATLANTIC COAST PORTS—		
Baltimore	133,000	(a) 582,000
Boston	.....	(a) 66,000
New York	492,000	(a) 543,000
Philadelphia	189,000	217,000
Others	265,000	196,000
Total	1,079,000	1,604,000
Daily Average	154,143	229,142
AT GULF COAST PORTS		
Galveston District	60,000	.....
New Orleans & Baton Rouge	.....	122,000
Port Arthur & Sabine District	.....	.....
Tampa	.....	.....
Total	60,000	122 000
Daily Average	8,571	17,429
AT ALL UNITED STATES PORTS		
Total	1,139,000	1,726,000
Daily Average	162,714	246,571
Daily Average Four Weeks Ended	211,500	224,464
Distribution of Total Imports is as follows:		
Crude	700,000	(a) 1,206,000
Gasoline	146,000	119,000
Gas Oil	11,000	.....
Fuel Oil	282,000	(a) 401,000
Total	1,139,000	1,726,000

(a)—Revised.

Receipts of California Oil at Atlantic and Gulf Coast Ports

(Barrels of 42 Gallons)

	Week Ended Oct. 24	Week Ended Oct. 17
AT ATLANTIC COAST PORTS—		
Baltimore	.....	.....
Boston	.....	35,000
New York	22,000	243,000
Philadelphia	118,000	174,000
Others	.....	99,000
Total	140,000	551,000
Daily Average	20,000	78,714
AT GULF COAST PORTS		
Total	6,000	.....
Daily Average	857	.....
AT ATLANTIC AND GULF COAST PORTS		
Total	146,000	551,000
Daily Average	20,857	78,714
Daily Average Four Weeks Ended	50,643	57,321
Distribution of Total Receipts of California Oil is as follows:		
AT ATLANTIC COAST PORTS		
Gasoline	140,000	551,000
Total	140,000	551,000
AT GULF COAST PORTS		
Gasoline	6,000	.....
Total	6,000	.....

MARKET SECTION

United States Daily Average Production

1930	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
June	665,550	133,600	668,300	210,500	40,300	56,900	135,750	84,600	598,000	2,593,500	77,806,900
July	594,750	121,600	652,350	209,400	40,550	55,400	137,200	98,350	610,450	2,520,050	78,121,200
August	558,850	115,650	646,400	206,600	41,500	55,100	128,550	106,000	611,250	2,470,900	76,597,600
September	558,900	116,550	606,550	200,750	40,150	53,550	121,400	110,650	604,900	2,413,400	72,402,205
October	542,100	114,850	609,500	194,850	41,500	52,800	121,750	104,000	590,800	2,372,150	73,536,350
November	491,550	111,400	579,350	190,100	44,050	52,000	116,400	101,950	601,200	2,288,000	68,639,150
December	459,300	105,550	533,400	189,300	43,000	51,100	112,200	100,500	587,450	2,181,800	67,636,500
1931											
January	452,000	106,350	511,050	188,850	41,100	50,700	110,300	96,700	535,700	2,092,750	64,874,450
February	473,750	114,450	523,700	185,600	43,950	49,950	109,800	100,100	527,300	2,128,600	59,600,450
March	531,900	110,550	585,000	177,950	40,250	47,550	108,800	95,400	528,100	2,225,500	68,990,850
April	543,650	109,250	723,050	185,850	39,050	47,000	111,500	95,500	527,350	3,382,200	71,465,750
May	561,950	107,400	767,200	185,950	39,200	46,650	111,250	97,500	534,150	2,451,250	75,975,950
June	556,850	103,150	828,250	170,100	36,500	44,900	108,950	97,950	520,300	2,466,950	74,009,750
July	527,950	100,000	912,250	157,850	33,650	41,400	107,600	94,400	517,900	2,493,000	77,282,700
August	306,150	101,900	976,800	153,550	30,400	37,650	109,600	92,900	510,900	2,319,050	71,890,200
September	261,050	104,600	752,250	149,950	29,600	38,000	117,400	92,250	505,550	2,050,650	61,518,950
Oct. 3	273,500	107,250	836,450	150,750	29,200	37,600	123,600	91,400	497,700	2,147,450	15,032,150
October 10	251,550	107,600	865,200	151,200	28,900	37,500	121,400	92,950	505,500	2,162,700	15,138,900
October 17	505,600	101,900	886,650	154,400	29,500	37,950	120,300	93,300	507,400	2,437,000	17,059,000
Oct. 24	482,500	101,900	854,650	152,350	29,500	37,950	119,050	95,250	508,100	2,381,250	16,668,750
October 31	519,050	102,950	869,300	156,250	28,900	37,750	124,800	95,350	496,900	2,431,250	17,018,750
Increase	36,550	1,050	14,650	3,900	.....	.....	5,750	100	.....	50,000	350,000
Decrease	.....	.....	.....	.....	600	200	.....	.....	11,200	.....	.....

Last Week's Daily Average Production by Districts

TEXAS	Oct. 31	Oct. 24
Panhandle	64,700	65,050
North Texas	57,450	57,400
West Central Texas	27,150	26,950
West Texas	191,800	192,700
East Central Texas	56,450	56,250
East Texas	417,700	400,300
Southwest Texas	54,050	56,000
Texas Gulf Coast	124,400	125,100
Total Texas	993,700	979,750
OKLAHOMA	519,050	482,500
CALIFORNIA	496,900	508,100
KANSAS	102,950	101,900

LOUISIANA	Oct. 31	Oct. 24
North Louisiana	28,900	29,500
Louisiana Gulf Coast	31,850	27,250
Total Louisiana	60,750	56,750
ARKANSAS	37,750	37,950
MOUNTAIN STATES		
Wyoming	38,850	39,250
Montana	8,050	7,750
Colorado	4,250	4,450
New Mexico	44,200	43,800
Total Mountain States	95,350	95,250
EASTERN STATES	124,800	119,050
TOTAL UNITED STATES	2,431,250	2,381,250

Summarized Review of Field Results

State—	Completions This week	Completions Last week	Oil Wells This week	Oil Wells Last week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	1	0	0	0	0	0	1	0	0	0
California	4	9	4	9	0	0	0	0	7,150	18,100
Illinois	2	0	1	0	0	0	1	0	2	0
Indiana	3	0	0	0	0	0	3	0	0	0
Kansas	7	7	3	5	2	1	2	1	1,270	3,650
Kentucky	3	2	3	1	0	0	0	1	120	35
Louisiana	9	5	7	4	0	0	2	1	4,850	3,898
Michigan	2	5	2	1	0	4	0	0	3,400	2,400
Mississippi	3	1	0	0	2	1	1	0	0	0
New Mexico	1	1	0	0	0	0	1	1	0	0
New York	2	3	0	3	2	0	0	0	0	17
Ohio	22	17	3	1	14	11	5	5	60	3
Oklahoma	14	9	6	2	1	2	7	5	58,990	50
Pennsylvania	0	14	0	8	0	5	0	1	0	21
Texas	183	136	175	122	0	2	8	12	1,421,859	958,560
West Virginia	9	6	1	2	7	4	1	0	3	51
Total	265	214	205	158	28	30	32	26	1,497,704	986,785
Increase	51		47		..		6		510,919	
Decrease	..		..		2		..		.....	

Comparison of Permits Granted for New Wells

State—	For Week Ending Oct. 31	Previous Week	This Week 1930	Total This Month	This Month 1930	Total this Year	Total This Date Last Year	1930 Year Total
Arkansas	0	1	1	2	11	29	92	108
California	6	1	27	24	122	311	788	922
Louisiana	3	12	11	28	81	273	854	948
Kansas	12	9	8	43	80	386	852	944
Oklahoma	14	15	45	68	218	704	2,555	2,830
Texas	150	198	88	975	492	5,588	6,382	7,052
Total	185	236	180	1,140	1,004	7,291	11,523	12,804

MARKET SECTION

prove serious. Long Beach, Santa Fe Springs, Playa del Rey and Seal Beach are definitely out of the way. Huntington Beach and Inglewood could become dangerous factors because of deep zone production. Kettleman Hills is well under control, and the Middle Dome may not be productive at all.

Tightening of the crude supply has aided sentiment, even if it has not been helpful to the small purchaser who shops around to fill his requirements. The broker and small refiner who was not too particular about ethics have done well during the past year, but they may have harder sledding during the next year.

Both wholesale and retail gasoline prices have stiffened slightly; but there has been no change in the posted service station prices.

The plan to appoint E. B. Reeser arbiter for the industry in California has not assumed a more definite form.

Arguments Made Against Acreage Plan for East Texas Proration

Austin, Texas.—Parties protesting the proposed inauguration of the four-barrel-per-acre program in East Texas met with Governor Sterling in Austin October 28 to file their protests.

The best argument that has been advanced against the new plan is that it will cause unequal withdrawals in areas where congested drilling offsets large tracts. For instance, a 40-acre lease with four wells has a daily allowable of 160 barrels, or 40 barrels per well per day. Offsetting one of these wells may be a 100-acre tract with only one well, which would be permitted to withdraw 400 barrels per day.

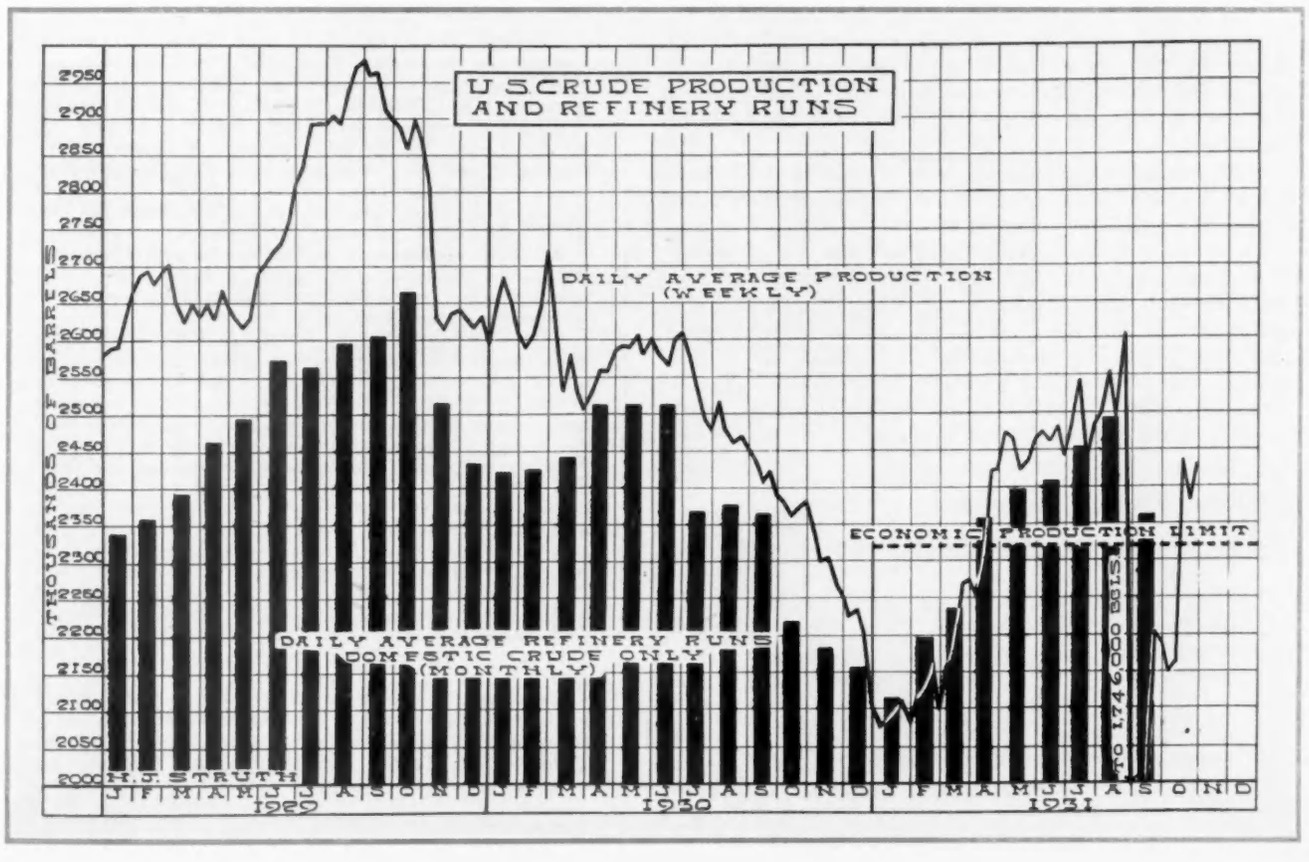
East Texas Price Boost Adds $60,000 Daily to Operators

Tyler, Texas.—The 15 cent per barrel price increase assigned to the East Texas field effective November 2, making the new schedule 83 cents per barrel and on a par with Mid-Continent crude of like gravity, will add more than $60,000 daily to the gross revenue received by the owners of the 2800 completed wells in the field. Magnolia Petroleum Company initiated the price raise for this field for the third consecutive time, having raised from 20 to 25 cents on August 13, and on August 22 posted a price of 68 cents that was soon met by all other purchasers.

Action taken by Sinclair Refining Company in meeting the above company's price advance in the East Texas field will serve to bring all other purchasers in line. Adoption of the 83-cent price by Humble Oil & Refining Company automatically brings Atlantic Oil Producing Company, Shell Petroleum Corporation and Stanolind Crude Oil Purchasing Company into the fold as this latter trio base their division order prices on that paid by the former.

Even though dozens of operators enjoying their first participation in production in the East Texas field are being added to proration reports each week, the military authorities in charge of proration report that few, if any, wells and leases are without pipe line connections and market relief. Purchasers are doing a good job in absorbing these new connections, although some of the former have recently over-connected, and were forced to surrender a portion of their load to others.

Unless a substantial improvement is registered by prices on refined oil products, numerous skimming plant owners



MARKET SECTION

in the East Texas will encounter further difficulties in trying to continue operating. With few exceptions, these refineries have poor plant efficiency, having been built hurridly in anticipation of an ample supply of high gravity crude at cheap prices. Strict enforcement of proration required each plant to tie up with many leases and wells to obtain supplies, and because of the aggressiveness of some of the major buyers these refiners can no longer obtain new crude connections at less than posted without advancing substantial cash sums to lease owners for development work.

Statisticians Complete Estimates On Consumption, Supply

New York.—The statistical sub-committee of the American Petroleum Institute's division of refining committee on refinery statistics and economics has completed the preliminary work of estimating supply of and demand for petroleum products in the nine-month period October 1, 1931, to July 1, 1932. Its preliminary report, work upon which was begun October 14, was finished October 29 and filed with the main committee. It will be revised after receipt of the U. S. Bureau of Mines summary for September and the final report presented to the main committee November 9 at Chicago.

The final report of the committees, with a report covering the same period prepared by the economics committee of the Federal Oil Conservation Board, will be made public at the Institute's twelfth annual meeting at Chicago as a feature of the general session on refining to be held November 12 at 2:00 p.m. in the North Ball Room of the Stevens Hotel. These reports will provide an estimate of the demand for gasoline that may be expected in the period covered, the amount of crude oil required to meet it, the total of gasoline working stocks at refineries, the amount of gas and fuel oil available, and other pertinent data. Also, they suggest an economic operating basis for the period.

Members of the statistical sub-committee, who spent more than 12 days in session at Institute headquarters preparing the preliminary report, are:

Chairman, Oliver S. Ambrose, Tidewater Oil Company, New York; secretary, Fred Van Covern, American Petroleum Institute, New York; W. C. Allen, The Texas Company, New York; Clarel B. Mapes, Mid-Continent Oil & Gas Association, Tulsa; A. J. McIntosh, Standard Oil Company of New York, New York; E. T. Knight, Atlantic Refining Company, Philadelphia; and W. A. Sinsheimer, Henry L. Doherty & Company, New York.

Kansas Fields' Allowable Increased to 20 Per Cent

Wichita, Kansas.—Following a meeting of operators held here Wednesday, October 28, the Public Service Commission issued orders raising allowable production in the Ritz-Decker-Garrett area of McPherson County and the Schurr-Raymond pool in Rice County, to approximately 20 per cent of estimated potential. During November and December the former area will be allowed to produce 5500 barrels daily from the chat horizon and a maximum of 12,000 barrels daily from the Viola limestone horizon, the latter amount being dependent upon demand. This is approximately 20 per cent of potential.

The Schurr-Raymond pool was allowed 1658 barrels daily based on an estimated potential of 8291 barrels. This oil is being transported through Prairie Oil & Gas Company's six-inch line and delivered to Stanolind Crude Oil Purchasing Company near Florence, Kansas. Schurr was without an outlet from January 1, 1931, to October 2, and was then opened after royalty owners and operators had raised a strenuous protest before the public service commission.

Prairie Oil & Gas Company's line was commenced about the middle of 1930 after land owners and operators had agreed to a sand development program and the first oil was run late in the year. On January 1, 1931, the company withdrew as a general purchaser, leaving the Schurr pool again without an outlet.

Daily outlet for the Ritz-Decker-Garrett area, exclusive of tank car racks, is approximately 12,000 barrels and Phillips Pipe Line Company's six-inch line is expected to increase the demand to about 17,000 barrels daily.

Sulphur Plant Projected by Jefferson Lake Oil Company

Houston.—Jefferson Lake Oil Company, which has been doing prospect drilling in the Iberia Parish portion of Lake Peigneur, Louisiana, has announced that it will build an 85-acre sulphur plant on that part of the lake shore lying in Vermilion Parish and that this plant will be completed in four months. Arthur Barba, Sr., is president of Jefferson Lake Oil Company.

CRUDE OIL PRICE CHANGES

Effective November 1, Joseph Seep Purchasing Agency of the South Penn Oil Company reduced Tidewater Pipe Company New York and Bradford district crude 10 cents a barrel to $2.00. A reduction of 10 cents was also posted on Pennsylvania oil in Southwest Pa. Pipe Lines, Pennsylvania oil in Eureka Pipe Line Company's lines and Pennsylvania grade in Buckeye Pipe Line Company's lines. New prices of the latter grades are now $1.70, $1.60 and $1.50 per barrel, respectively.

Effective October 31, Continental Oil Company posted an advance of 15 cents a barrel for Oklahoma crude. This action was followed by a number of smaller companies.

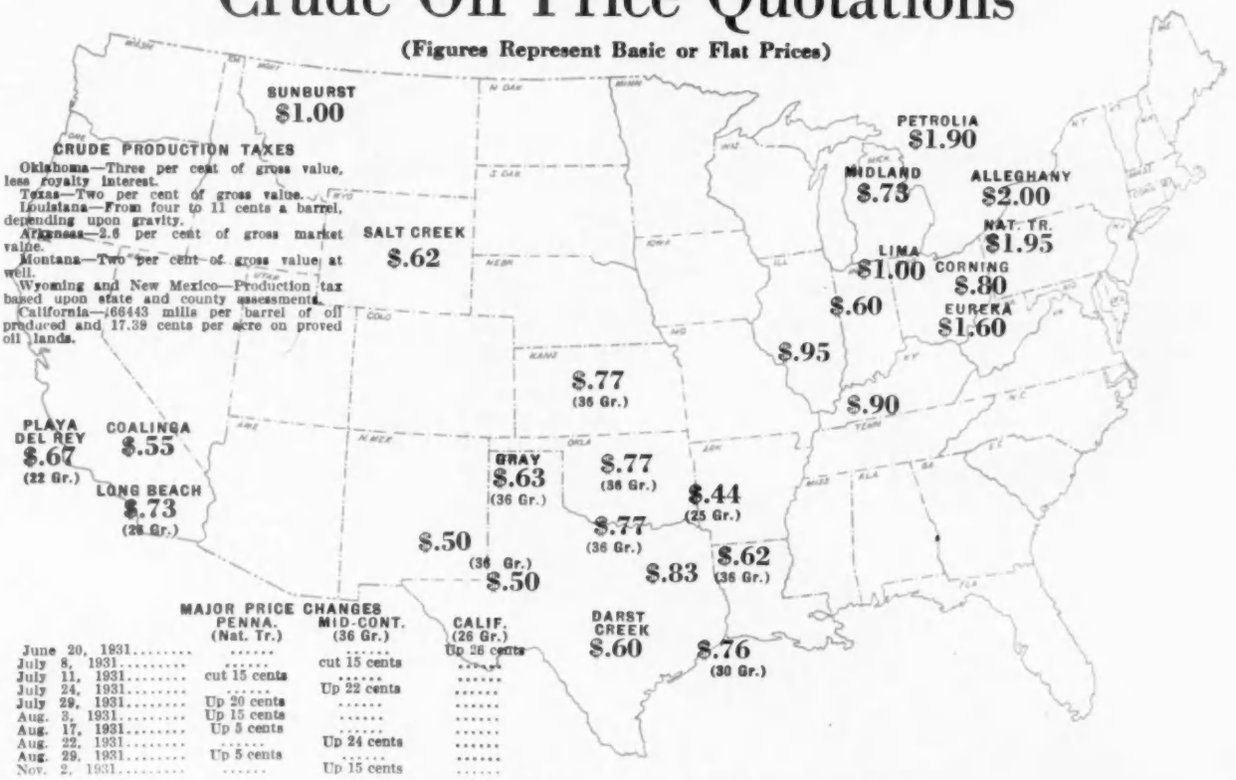
Effective November 2, Magnolia Petroleum Company announced an increase of 15 cents a barrel for all oil purchased in Oklahoma, North Texas, Central Texas, West Texas and East Texas. Flat prices were maintained by this company conforming to the policy adopted earlier this year. On the same date, Humble Oil and Refining Company posted an average advance of 15 cents a barrel for all oil purchased in North Texas, West Texas and New Mexico and also in the Gulf Coast district. Advances were also posted for Refugio, heavy crude; Mirando, Pettus, Salt Flat and Darst Creek.

Effective November 3, Ohio Oil Company announced an advance of 15 cents a barrel for Illinois, Princeton, Wooster and Western Kentucky crudes and an advance of 10 cents a barrel for Lima and Indiana oil.

Effective November 3, Ohio Oil Company posted an advance of 10 cents a barrel on Sunburst, Montana, oil and an advance of 15 cents a barrel on Elk Basin, Grass Creek, Big Muddy and Rock Creek crudes.

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices)



MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (26 Gr.)
June 20, 1931	.....	.....	.....
July 8, 1931	.....	cut 15 cents	.....
July 11, 1931	cut 15 cents	.....	.....
July 24, 1931	.....	Up 22 cents	.....
July 29, 1931	Up 20 cents	.....	.....
Aug. 3, 1931	Up 15 cents	.....	.....
Aug. 17, 1931	Up 5 cents	.....	.....
Aug. 22, 1931	.....	Up 24 cents	.....
Aug. 29, 1931	Up 5 cents	.....	.....
Nov. 2, 1931	.....	Up 15 cents	.....

Official Postings and Differentials

(Revised to November 3, 1931)

California: (Effective June 19, 1931.

Signal Hill, Seal Beach and Alamitos Heights: 14 to 22.9 gravity 65 cents; 23 gravity, 67 cents with differential of two cents for each degree upward. Top price for Signal Hill, 30 gravity, 81 cents; top price Seal Beach and Alamitos Heights, 27 gravity, 75 cents.

Huntington Beach: 14 to 21 gravity, 65 cents; 22 gravity, 66 cents with differential of two cents for each degree upward. Top price, 27 gravity, 76 cents.

Inglewood: 14 to 19.9 gravity 65 cents; 20 gravity 66 cents with differential of two cents for each degree upward. Top price, 25 gravity 76 cents.

Playa Del Rey: 19 to 20.9 gravity 65 cents with differential of one cent for each degree upward. Top price, 25 gravity, 70 cents.

Olinda and Brea Canyon: 14 to 19.9 gravity 65 cents; 20 gravity 66 cents; 21 gravity 67 cents; 22 gravity 68 cents with differential of two cents for each degree upward. Top price, 28 gravity, 80 cents.

Coyote Hills: 14 to 22.9 gravity 65 cents; 20 gravity 66 cents; 21 gravity 67 cents with differential of two cents for each degree upward. Top price, 28 gravity, 79 cents.

Santa Fe Springs: 24 to 26.9 gravity 65 cents; 27 gravity 68 cents; 28 gravity 71 cents; 29 gravity 73 cents; 30 gravity 75 cents; 31 gravity 78 cents; 32 gravity 80 cents; 33 gravity 83 cents; 34 gravity 85 cents; 35 gravity and above 87 cents.

Whittier, La Habra and Montebello: 65 cents a barrel.

Torrance: 14 to 21.9 gravity 65 cents with differential of one cent for each degree to 25 gravity and two-cent differential for 25 gravity. Top price, 25 gravity, 70 cents.

Richfield: 14 to 20.9 gravity 65 cents; 21 gravity 66 cents with differential of two cents for each degree upward. Top price, 25 gravity, 74 cents.

Elwood: 33 gravity 79 cents; 34 gravity 81 cents with differential of three cents for each degree upward. Top price, 36 gravity, 87 cents.

Newhall, McKittrick and Kern River: 55 cents a barrel.

Midway-Sunset, Elk Hills and Buena Vista Hills: 14 to 21.9 gravity 55 cents; 22 gravity 56 cents; 23 gravity 58 cents; 24 gravity 61 cents; 25 gravity 64 cents; 26 gravity 66 cents; 27 gravity 68 cents; 28 gravity 71 cents; 29 gravity 74 cents; 30 gravity 76 cents.

Los Hills: 14 to 20.9 gravity 55 cents; 21 gravity 57 cents; 22 gravity 59 cents; 23 gravity 60 cents; 24 gravity 62 cents; 25 gravity 64 cents; 26 gravity 66 cents; 27 gravity 67 cents; 28 gravity 69 cents; 29 gravity 71 cents; 30 gravity 72 cents.

Coalinga: 14 to 24.9 gravity 55 cents; 25 gravity 57 cents.

Wheeler Ridge: 55 cents a barrel.

Athens, Dominguez and Rosecrans: 24 to 24.9 gravity 69 cents with differential of two cents for each degree upward. Top price, 34 gravity, 89 cents a barrel.

Oklahoma, Kansas, North Texas (Effective November 2, 1931). Flat Prices.

Oklahoma: Cushing, Yale, Oklahoma City, Morrison, Wewoka and Seminole: 83 cents a barrel; **Cement, Duncan, Walters:** 75 cents a barrel; **Healdton:** 52 cents a barrel; **Hewitt and Graham:** 67 cents a barrel.

North and Central Texas: Burkburnett, Archer, Stephens, Henrietta, Electra, Comanche and Olden: 83 cents; **Mexia, Wortham, Corsicana Light, Panola County and Lytton Springs:** 79 cents; **East Texas:** 83 cents. **West Texas:** 50 cents; **Panhandle (Gray County):** 73 cents; **Carson and Hutchinson Counties:** 66 cents. **Mirando crude:** 75 cents; **Darst Creek:** 60 cents; **Corsicana Heavy and Luling:** 49 cents.

Gravity Scale Prices: Below 29 gravity: 61 cents, with differential of 2 cents for each degree to 40 gravity and above which is posted at 85 cents.

Texas Panhandle: (Effective November 2, 1931)

Gray County: Below 35 gravity: 61 cents, with differential of 2 cents for each degree to 40 gravity and above which is posted at 73 cents.

Carson and Hutchinson Counties: Below 35 gravity: 56 cents with differential of 2 cents for each degree to 40 gravity and above which is posted at 68 cents.

West Texas: (Effective November 2, 1931).

Crane-Upton, Crockett, Ector, Howard-Glasscock, Pecos and Winkler Counties, Texas, and Lea County, New Mexico: 50 cents a barrel.

Southwest Texas: (Effective November 2, 1931)

Refugio: Heavy: 75 cents.

Refugio, Light: (Same as Gulf Coast—see below.)

Gulf Coast: (Effective November 2, 1931)

Goose Creek, Hull, Liberty, Orange, Pierce Junction, Mykawa, Moss Bluff, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugarland, West Columbia, Humble and Refugio Light: Below 25 gravity: 70 cents, with differential of 1 cent for each degree to 40 and above which is posted at 86 cents.

Mirando: 75 cents; **Salt Flat:** 60 cents; **Darst Creek:** 60 cents; **Pettus:** 85 cents; **Markham:** 52 cents.

East Texas (Effective November 2, 1931)

Flat Price 83 cents.

North Louisiana and Arkansas: (Effective Aug. 22, 1931.)

Caddo, Homer, Haynesville, Bull Bayou, Sabine, Cricton, De-Soto, El Dorado, Cotton Valley, Sarepta, Cartersville: Below 29 gravity 44 cents with differential of 1 cent for each degree beginning with 29 gravity and ending with 40 and above. Top price 70 cents a barrel.

Smackover: 52 cents.

Rocky Mountain States: (Effective Nov. 3, 1931).

Salt Creek: Below 29 gravity 46 cents; 38 gravity and above 66 cents.

Elk Basin and Grass Creek: $1.05; **Big Muddy:** 83 cents; **Lance Creek** $1.20; **Rock Creek:** 85 cents; **Sunburst:** $1.00; **Osage:** 98 cents; **Cat Creek:** 65 cents; **Pondera:** 70 cents; **Hogback, New Mexico:** 72 cents.

Eastern States: (Effective November 3, 1931)

Lima: $1.00; **Indiana:** 60 cents; **Illinois:** 95 cents; **Princeton:** 95 cents; **Wooster:** $1.15; **Western Kentucky:** 90 cents.

Pennsylvania: (Effective November 1, 1931)

Bradford District: $2.00; **National Transit Oil:** $1.95; **Southwest Pennsylvania Pipe Line oil:** $1.70; **Eureka Pipe Line Oil:** $1.60; **Buckeye Pipe Line Oil:** $1.50; **Corning crude:** 80 cents.

Michigan: (Effective Aug. 22, 1931). **Midland: 73 cents a barrel. Muskegon:** Same posting as Mid-Continent; 44 cents to 70 cents a barrel.

Canada: (Effective Nov. 3, 1931).

Petrolia: $1.90; **Oil Springs:** $1.97.

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GUIBERSON

BETTER BE SAFE THAN SORRY

Production Control to Feature Institute Meeting

(*Continued from page 23*)

other industries, are to be considered at a general session Tuesday afternoon, November 10, in an address, "The Anti-trust Laws and the Natural Resource Industries," by Oscar Sutro, Standard Oil Company of California, San Francisco.

East Texas, which has been so much in the public eye during the past year because of the rapid and enormous development of its oil field areas, will be brought into the picture through the address of Colonel J. Lewis Thompson, Kilgore, Texas, business man, on "East Texas and East Texans."

Once again a forecast will be made of the demand for petroleum products that may be expected in the early future and of the supply required to meet it. The estimate, covering nine months, will be presented in the reports of independent and separate committees, one representing the Federal Oil Conservation Board and the other, the Institute, before a general session of the division of Refining to be held Thursday afternoon, November 12, which closes the meeting.

Aviation problems will be discussed by William B. Stout, Stout Engineering Laboratories, Dearborn, Michigan. Interest in research, with discussion of results obtained from the Institute's five-year research program, will be renewed through addresses by Frank B. Jewett, American Telephone & Telegraph Company, New York, and J. Bennett Hill, Atlantic Refining Company, Philadelphia.

More than 50 sessions are scheduled for the annual meeting. Many of these are committee meetings, and although the annual meeting officially opens November 10, active workers in the Institute will arrive at Chicago as early as November 7. One committee meeting is scheduled for that date and it is probable that several others will be held.

On Monday, November 9, the program indicates, 17 committee meetings are scheduled, and numerous other committees probably will follow custom and go into session at some time during that day. General and group sessions begin Tuesday, November 10, and are resumed Wednesday and Thursday, but with the possible exception of the period Wednesday night that is to be devoted to the Institute's annual dinner it is probable that some committee will take advantage of any free hour available and go into session to discuss its special projects.

There are nearly 100 standing committees within the organization. Many of these have sub-committees, and many special committees from time to time are created. Most of them work toward particular objectives, seeking to employ the best talent and latest information available for the solution of their specific problems. Others are in the nature of co-ordinating groups, entrusted with the formulation of general policies and direction of the efforts of the smaller units. Some committees are purely local in organization and scope; others include representatives of every section and state.

The names of the committees usually indicate the nature of their work. Thus, at Chicago, such groups will report upon progress of work for adoption of a policy of unit operation of oil fields and discuss future activities. They will consider fire prevention, waste disposal, uniform accounting, testing methods and specifications, drilling and production practice, statistics, fundamental research, uniform gasoline tax laws, gasoline tax evasion, marketing practices, railroad transportation and other subjects.

The Institute is the American oil man's forum, information bureau, technical clearing house and trade association. There are some four score other trade associations in the industry, but the Institute is unique in that its membership is the largest, the scope of its activities nationwide and is interests inclusive of all branches and all phases of the petroleum industry.

There are three branches of the Institute—the division of production, refining and marketing—in which are enrolled members active in these respective branches of the industry. Each division is directed by a general committee; a chairman, who is also an Institute vice president, and a secretary, usually a member of the Institute staff. Activities of the Institute are directed by a president, vice president at large and the three divisional vice presidents, an executive vice president who is in immediate charge at headquarters, a treasurer and a secretary. Executive control also is placed with a board of directors and an executive committee.

The work of the Institute is done largely through the functioning of departments and committees. Present departments are: department of statistics, department of accident prevention, engineering department, membership and finance department, and department of public relations. There are a number of standing committees of the Institute, of the divisions and of the departments, each permanently assigned to the promotion of special work. In addition there are committees and sub-committees appointed as specific needs arise.

The divisions, with their special committees, function within the Institute as separate units interested in their respective branches of the industry. Divisional organization is such as to permit the formation of sections representative of various districts of the country, and chapters, usually representative of the local areas. Problems originating in any of the smaller units may be referred to the larger groups, and to the various committees, for study, report and recommendation of solutions. Problems involving the interest of the entire industry similarly are referred by the larger to the smaller groups for co-operative study.

The division of production works with such subjects as standardization of equipment, drilling and production practice, unit operation, waste disposal, fire prevention, care of equipment, corrosion and accident prevention.

Special Railroad Plans Made For Texans Going to Chicago

Houston.—Several special cars have been arranged by the Missouri Pacific railroad lines to accommodate passengers going from South Texas and North Texas to the Chicago meeting of the American Petroleum Institute.

A special car will leave Houston Saturday afternoon, November 7, at 1:15 o'clock over the Missouri Pacific lines, and at Longview, Texas, the South Texans will meet a North Texas party of at least two and possibly three cars. The two groups will then proceed together to St. Louis, whence they will travel different routes to Chicago.

The South Texas aggregation will go from St. Louis to Chicago over the Alton railroad, reaching their destination at 6:35 Sunday afternoon. The North Texans will go from St. Louis to Chicago on the Chicago & Eastern Illinois road, arriving at Chicago at 6:15 o'clock Sunday afternoon.

Further Curb of Oil Output Of Three States Proposed

Austin, Texas.—Production of Texas, Kansas and Oklahoma may be cut 10 to 20 per cent if the suggestion of Thurman Hill, member of the Kansas Conservation Commission, is followed. Hill wired C. V. Terrell, chairman of the Texas Railroad Commission, on Monday, November 2, and requested another tri-state oil meet at Tulsa on November 30 for this purpose.

Hill insists that the present healthy condition of the oil industry is due directly to the oil states agreement signed in Austin on September 18. The supply of United States crude is below the demand, he stated; the gasoline wholesale price has been strengthened; but the purchasers of crude have refused and neglected to pay a fair price for crude that will equal or surpass the cost of production. "The small advance which took place the early part of this week does not do justice to the producers," he continued, "and the importers are principally to blame. If the purchasers of crude believe that they can buy our minerals below cost of production, let us remove that belief. Let us make crude oil hard to buy below the cost of production."

Such an action by these three states should undoubtedly increase the price of crude. Recent laws in Texas, however, may prevent an agreement of this nature, as the attorney general may be of the opinion that such contracts are unconstitutional, although the previous agreement carried the conditioning clause stating that the signers would carry it out "in so far as the laws of their respective states would permit."

New Regulations Made for East Texas Field Methods

Austin, Texas.—The railroad commission on October 16 supplemented its former detailed regulations governing operations in the East Texas field with four new provisions.

The first supplemental regulation provides for testing all oil strings or flow strings of casing for leaks, a definite method of testing being prescribed. The second rule requires that "All surface or Christmas Tree fittings shall be tested to a pressure not less than 800 pounds." Rule 3 provides that "All wells shall be equipped with a bradenhead or casinghead with working pressure of not less than 800 pounds." Rule four prescribes that "All wells that encounter the top of the pay horizon at minus 3300 feet or lower shall be allowed a sand penetration of four feet."

The testing for leaks, which is required under the first rule mentioned above, is to be carried out in the following manner: "After the string is cemented and before the cement plug is drilled the fluid in the casing shall be bailed or swabbed until the top of the fluid is 2500 feet or more below the surface. The well shall be allowed to stand in this condition for 48 hours, at the end of which time a measurement shall be taken to the top of the fluid. If it is found that the fluid has not raised more than two feet the casing shall be adjudged in good condition. If the fluid level has raised more than two feet the well will be allowed to stand 24 hours more and again measured for fluid level. If no further rise in level is noted the casing will be adjudged in good condition and operations allowed to continue. If the second measurement shows a rise in fluid level, the casing will be condemned and the operator ordered to correct the condition. This may be done either with a new string of casing or where possible by cementing the old string back to the surface. After the corrective operations the well will again be tested in the above manner.

Governor Favors Acreage Plan For East Texas Conservation

Austin, Texas.—After hearing presentation of the proposed plan of the Texas Oil and Gas Conservation Association for prorating the East Texas field upon an acreage basis, Governor Ross S. Sterling late last week stated that the plan appears thoroughly fair and practical and that it should bring protest from no one thoroughly understanding it. "I believe," the governor said, "that it can be and will be put into effect."

The conference was a round-table discussion held in the governor's office on Friday morning, October 30, and was open to newspaper men, invited to ask questions and urged to give the public generally a full understanding of the position of the governor on the question. Governor Sterling was generous in his praise of the plan, particularly its brevity.

A committee consisting of Judge Beeman Strong of Yount-Lee Oil Company, J. R. Pearson of Wheelock and Collins, J. Edgar Pew of Sun Oil Company, T. J. Donoghue of The Texas Company, H. L. Hunt, C. F. Roeser and Colonel J. L. Thompson, presented the plan to the governor as a committee representing East Texas operators who met in Dallas earlier in the week. The signatures of all others present at that meeting were also attached to the plan, which had received the unanimous approval of the group.

The most important part of this plan is Rule 2, which decrees that any lease comprising less than 20 acres shall be permitted to produce the allowable of a 20-acre lease less a deduction of one barrel per acre daily for each acre less than 20 acres. That is, each lease of 20 acres has an allowable of four barrels per acre, or 80 barrels; a 19-acre lease would be permitted to produce 79 barrels, or a three-acre lease 80 less 17, or 63 barrels per day. This clause particularly appealed to the governor as being one of the fairest methods of proration that has been designed, insofar as taking care of the little man is concerned. It gives him an obvious advantage, and insures him of this allowable for the entire life of the field. He has a dependable production from his wells which will enable him to get financial aid from any bank, making a loan on expected production.

Rule one requires that a committee of engineers thoroughly familiar with the proven areas of the field be appointed and commissioned to ascertain the exact amount of proven acreage lying within the known limits of the pool. Pending that investigation the committee recommended the setting of an allowable of four barrels per acre for the pool, that being a figure which they calculate will most completely eliminate physical waste.

Rule three states that rule two shall not apply for any lease of less than 20 acres which has been created subsequent to September 15, as set out in the railroad commission order of that date.

Rule four states that no well would be accorded an allowable greater than that accruing to a 100-acre lease, and no allowable shall be made to any lease until an initial well has been placed on production. This will discourage the drilling of further wells on the larger tracts, and will make line drilling useless, as any one well may produce up to 400 barrels, providing it is on a tract of 100 acres or more, or a single well on an 80-acre tract may produce 320 barrels, thus eliminating the necessity of drilling more wells to get an allowable proportionate to offsetting lease-holders, as is the case under the present per-well method.

Many protests against the proposed change were filed with the governor by wire, but he feels sure that when these operators, practically all of whom are holders of the smaller

tracts, less than 20 acres, understand the advantage given to them under this plan, they will readily agree that they are being more than fairly treated.

"It is high time," said the governor, "that we develop a little confidence in each other. Confidence will do more to relieve the present depression than anything else. Under this plan the little fellow would be protected, but the committee will have to see that he understands it."

The members of he committee estimate that under this plan the allowable at the present time would be 370,000 or 380,000 barrels, and 400,000 barrels when the entire field is finally developed.

The governor found only one defect in the plan. There is no method included to protect the interest of the state in the oil which underlies the Sabine River bed where that stream flows through the producing field. This, however, he believes can be worked out between now and the first of the year when the law permitting the leasing of the stream goes into effect.

The committee urged prompt action on the plan, stating that a delay of 30 or 60 days would cause the drilling of many wells which will be unnecessary if the order is placed in force at once. The governor, however, indicated that if there are still protests against the installation of the plan following the Friday conference, that he would hold a hearing to let the other side tell their story before taking any action.

Houston.—Preparations were being made November 3 to test a sand encountered at 3149 feet in the wildcat well being drilling by L. B. House on the C. T. Palmer property, a mile south of Cleveland in Liberty County. The broken formation encountered at the above depth extended to 3161 feet. The well formerly was property of the J. R. Ingram Petroleum Company; it is located on the F. J. Fenner Survey.

A STATEMENT OF CONDITION

(From "The Lamp")

At approximately regular intervals members of the national banking system are required to publish statements to enable stockholders and depositors to follow changes in their loans, investments, cash position, etc. An attempt is made here to present a comparable summary of the position of the petroleum industry for the benefit of those who try to keep up with the significant developments. For this purpose, statistics of production, imports, refinery operations, stocks and consumption are given for the two latest months for which these returns are available, with increases or decreases.

From the accompanying figures it will be seen that in most respects the industry has made satisfactory progress in meeting its principal problem, overproduction. Domestic crude production in August, 1931, due to the shut down in Oklahoma and East Texas, was well below the total for either July or for August, 1930. Crude imports were likewise greatly curtailed in August, being but little more than half of those for the corresponding month a year ago. There was also a substantial decrease in the imports of refined products.

On the unfavorable side was a striking loss in our export business, which more than offset the gain in domestic consumption in gasoline. The average refinery price of gasoline was better in August than in the month previous, but was still substantially below the price a year ago. Both domestic consumption and exports of gas and fuel oil reflected the influence of the depression upon industrial activities and maritime operations.

	1931		Increase or Decrease	1930	Aug., 1931 Inc. or Dec. from Aug., 1930
	August	July		August	
Daily Average, U.S. Crude Production	2,207,000	2,515,000	—308,000	2,414,000	—207,000
" " U. S. Imports of Crude	87,000	116,000	—29,000	163,000	—76,000
" " U.S. Crude Supply	2,294,000	2,631,000	—337,000	2,577,000	—283,000
Average Price, 36° Mid-Continent Crude	$0.46	$0.28	+$0.18	$1.29	—$0.83
Oil Producers Completed	441	599	—158	988	—547
Wells Drilling Last of Month	2,217	2,379	—162	3,688	—1,471
Daily Average, U.S. Imports of Products	104,000	111,000	—7,000	140,000	—36,000
Daily Avg., Domestic Consump. Crude and Products	2,599,000	2,591,000	+8,000	2,601,000	—2,000
" " Exports Crude and Products	373,000	379,000	—6,000	483,000	—110,000
" " Total Consumption Crude and Products	2,972,000	2,970,000	+2,000	3,084,000	—112,000
Total Stocks of Crude and Products	634,734,000	649,205,000	—14,471,000	686,831,000	—52,097,000
Daily Average, Crude Run to Stills	2,602,000	2,573,000	+29,000	2,558,000	+44,000
" " Motor Fuel Production	1,267,000	1,240,000	+27,000	1,225,000	+42,000
" " Domestic Motor Fuel Consumption	1,273,000	1,273,000	.....	1,207,000	+66,000
" " Exports of Motor Fuel	136,000	144,000	—8,000	216,000	—80,000
" " Total Motor Fuel Consumption	1,409,000	1,417,000	—8,000	1,423,000	—14,000
Refinery Stocks of Gasoline	35,663,000	38,948,000	—3,285,000	41,412,000	—5,749,000
Price of U.S. Motor Gasoline, F.O.B., Group 3	4.26¢	2.81¢	+1.45¢	5.58¢	—1.32¢
Average Tank Wagon Price Gasoline, 50 Cities, ex-Tax, First of Month	11.00¢	11.21¢	—.21¢	14.85¢	—3.85¢
Average Gasoline Tax	4.09¢	4.05¢	+.04¢	3.78¢	+.31¢
Daily Avg., Domestic Consumption Gas and Fuel Oil	867,000	863,000	+4,000	951,000	—84,000
" " Exports of Gas and Fuel Oil	73,000	87,000	—14,000	99,000	—26,000
" " Total Consumption Gas and Fuel Oil	940,000	950,000	—10,000	1,050,000	—110,000
Average Price, Bunker C Fuel Oil, Ex. Term. N.Y.H.	$0.71	$0.82	—$0.11	$1.15	—$0.44

EDITORIALS

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Martial Law—or What?

IN the opinion of THE OIL WEEKLY there are but two alternatives in East Texas, alternatives that every operator, be he anti-prorationist or prorationist, should bear in mind. It is our belief that either martial law must be maintained or we must expect a veritable flood of oil from East Texas that will beat the market down to 10 cents a barrel, not only for East Texas but a major part of the Mid-Continent as well. We do not believe that there is any middle ground.

We will grant that no matter how good the intentions of the Governor of Texas may be, it is unlikely that the present martial law proration would stand the test of the United States Supreme Court hearing, so if the matter does go to the Supreme Court it is well to take into consideration just what will happen.

Few people believe that the present Texas conservation law will stand the test of any court and while we are not lawyers the opinion we have just expressed has been concurred in by many of our legal friends who have the background of long experience. Certainly the application of the law as it was laid out in East Texas could hardly expect to stand in court.

Therefore, in considering what has been done by Governor Sterling it must be considered from the standpoint of a radical cure of a bad situation. If we regard the precedent it has set and the fact that martial law has disregarded certain individual rights, we must not forget the fact that the oil industry is in better shape because of the procedure that Governor Sterling has followed, and certainly the citizenship of Texas and the state itself from tax revenues have benefitted materially.

But getting back to our first statement. We do not have to guess what will happen if all restraint is taken off. Many operators who desire to conduct their business in a sane and conservative way will be forced to protect their properties from drainage and open their wells if other operators, not so sane or conservative, decide to take the lid off in the event that martial law should be raised.

We talked recently to an executive of one large company which is supposed to be very much opposed to the present arrangement in East Texas. This company is reported in the past to have been opposed to any type of curtailment or proration. Here is what the executive said:

"We are not opposed to proration. We are opposed to the present ridiculous allowable in East Texas and the fact that it is maintained by martial law in defiance of all rights. We have need for a certain amount of oil. We have the properties with the wells already drilled which we know will give us that amount of oil. What we want is what we need. We do not want to see the field operated on a wide open basis and we do not believe that it will be if martial law is raised."

Conversation developed the fact that this company could secure all the production it needed if its own wells were permitted to produce 600 barrels a day each.

"That would not be wide open," he said, having previously stated that he did not believe that the field would go to as much as 1,250,000 or 1,500,000 barrels a day if "turned loose."

Whereupon we pointed out that if the approximately 2400 wells in East Texas, were allowed to make 600 barrels each, the field would produce 1,440,000 barrels per day.

That much oil would wreck crude oil prices not only in East Texas but in the entire Mid-Continent as well, if we look at it from strictly an economic standpoint. It would hasten the appearance of salt water, would raise the ultimate cost of producing the oil and if there is anything at all in the theory that disorderly production would cause channeling and interfere with ultimate recovery, then the actual potential production of East Texas would be reduced considerably.

We do not believe that anybody wants to see such a condition. Even those gentlemen who opposed the Texas Railroad Commission's order in East Texas recently would not want such a condition to obtain, we believe, although naturally they have not asked us to state their beliefs or opinions. But it does not seem logical that they should want to ruin their own market and their own potential in East Texas. We rather imagine that what they desired was a change in the allowable, forgetting that if it is changed for them it would be changed for all and forgetting that even a moderate increase in the allowable would damage their own ultimate market, because surely they hope to produce oil in East Texas after any present sales contract they may have is concluded.

But in the very nature of things there can be no middle ground. It can not be had through agreement—we have all seen that. And if the martial law restriction is removed what one operator does will determine what the field will do.

We believe that if the field is allowed to produce wide open that much of the head will be off before spring is closed—and while East Texas removed as a menace to the oil industry would be fine, it would be an economic crime to remove it in such a way.

Tax Evasion Hurts

THE adverse effect of the constantly mounting gasoline tax on the producer of petroleum is called to the attention of those producers in a letter to Wm. N. Davis, president of the Mid-Continent Oil & Gas Association, written by Harry H. Smith, general secretary of that organization. The letter conveying to the president a resume of work done and projected by the association, has a section devoted to the gasoline tax, which says in part:

"Among the new and serious problems confronting the oil industry, and one which should probably be the basis for broadened activity by this association, is the gasoline tax . . . Reports indicate that evasion, fraud and embezzlement arising out of the imposition of this tax have become so widespread and persistent as not only to threaten the revenue for roads but to create a competitive situation in which honest and legitimate gasoline dealers are placed at a devastating disadvantage. . . .

"When we have a buyers' market for crude and gasoline and the price to the public cannot be increased, the oil producer himself pays a large part of the gasoline tax through reductions in the price paid for crude by the refiners. If these purchasers cannot pass the tax on to the public because of depressed conditions, they pass it back on to the producer who, being overproduced, must accept whatever price the purchaser sees fit to offer. . . .

"The public must be shocked into a realization of the facts. How this must be done is a question. Properly framed newspaper advertising might do it but we have no funds for such a purpose and the industry may feel that it is unable at this time to supply them."

The letter then calls attention to a copy of a page advertisement which appeared in the Oklahoma News for that paper's state fair edition, in which facts about Oklahoma's gasoline tax and its evasion were carefully and interestingly set forth. The copy pointed out that gasoline claimed for exemption by agriculture in Oklahoma had increased nearly 50 per cent this year over last and that 25 per cent increase in the tax rate this year to five cents per gallon had resulted in an actual loss in gross revenue as compared to the former four-cent rate.

Throughout the country the gasoline tax is fast becoming a political football, with resultant ill effect on the industry. Tax evasion is rampant in the Chicago metropolitan area and elsewhere in Illinois and Indiana, as revealed by a leading Chicago newspaper whose reporters spent considerable time ferreting out evaders and gasoline bootleggers. In Texas the called session of the Legislature recently passed a bill diverting 25 per cent of the tax to the redemption of county road bonds—a law wholly unfair to certain counties which had already paid up their road bonds and had no chance to share in this distribution—another vivid instance of the growing political aspect of the gasoline tax. Hundreds of other cases could be sited which show the growing menace to the industry that the gasoline tax presents.

But the fact that the gasoline tax reverts back to the producer of oil, as suggested by Mr. Smith, is of particular importance at this time when the market structure appears to be so uncertain. And it becomes readily apparent that an improved price for crude may depend upon the strict enforcement of the gasoline taxes of the several states—a feat of politics apparently impossible of execution. Plainly enough the petroleum industry should adopt the slogan suggested by Mr. Smith, namely, "Enforce the tax, or repeal it." The inclusion of the producer makes possible the presentation of a united industry against the tax.

That the industry considers tax evasion highly important is attested to by the inclusion of a discussion of this matter at the twelfth annual meeting of the American Petroleum Institute. It is to be hoped that a definite program will be mapped out which shall have as its aim the correction of this evil.

Roumania Dumps

HISTORY is in the making.

The oil industry of the United States was but little disturbed when a first cargo of Roumanian gasoline was shipped across the Black Sea, the Mediterranean Sea, and the Atlantic Ocean and up the St. Lawrence River to Detroit and there distributed at cut-rate prices. It was presumed to be a distress consignment, imported on speculation and sold at a loss.

Now comes news of a second cargo to be shipped under terms and conditions which allow a certainty of profit to the importer. The transaction likewise involves a loss but not to the importer or distributor. We are not informed regarding the specifications of this proposed second consignment, but it has been indicated that it will yield to the refiner who sold it not more than 2½ cents and not less than 1.1 cents per gallon. It is not to be supposed that gasoline can be manufactured over long periods of time at 46 cents or 82 cents, or even $1.05 per barrel.

The answer appears to be that Roumanian oil operators are entering the final phase of a situation which developed upon the wreck of proration last year. Operators in other countries may take comfort in the knowledge that this situation carries its own remedy. Disturbing elements have a way of eliminating themselves.

Thereupon, or thereafter, stabilization again may become possible in Roumania.

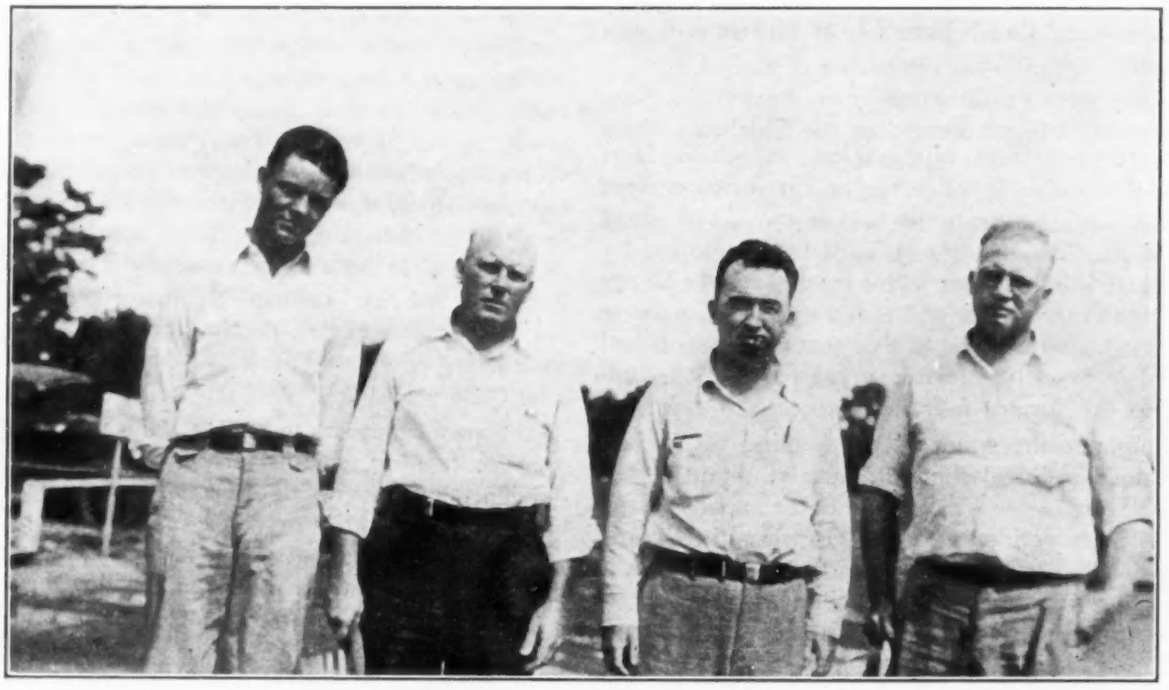
Meanwhile, the Soviets are receiving less and less of foreign gold in exchange for their most saleable commodity.

"SHOTS FROM THE HOT SPOT"

Tom E. Alexander, photographed recently in Longview, has been given charge of sales for E. H. Edwards Company east of the Rockies after joining the company early this year. He has been selling to the oil country for 17 years.

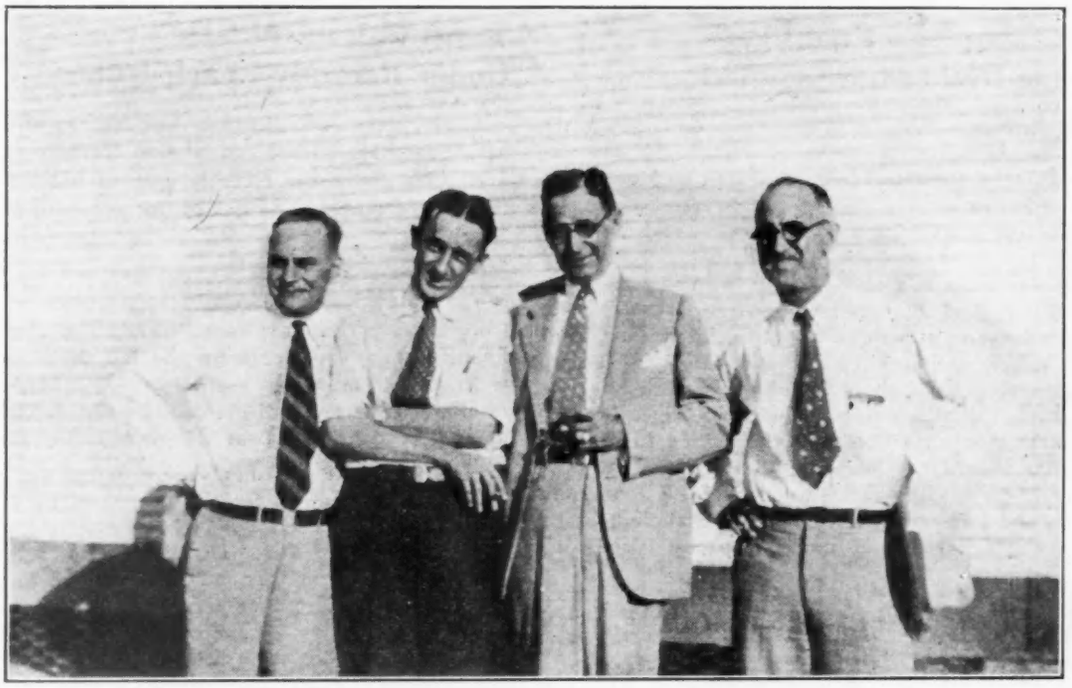
R. R. Hoskins, who recently joined Diamond Metal Company in East Texas, was formerly purchasing agent for Humphreys Corporation, Houston, and previously was with Oil Well Supply Company for 18 years.

E. N. Koonsman, sales representative for Pittsburg-Des Moines Steel Company, Dallas headquarters, is spending some of his time now in East Texas.

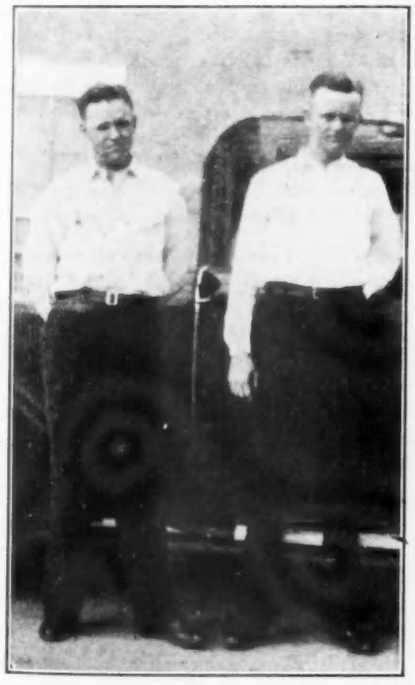


Left to right: F. C. Myers, store clerk for Black, Sivalls & Bryson at Kilgore; Ed. Voight, assistant branch manager, and Gurney Peoples, district manager for Black, Sivalls & Bryson in East Texas; and A. F. Nixon, on the right, is vice-president and sales manager for Happy Belting Company, Tulsa, now making East Texas his headquarters.

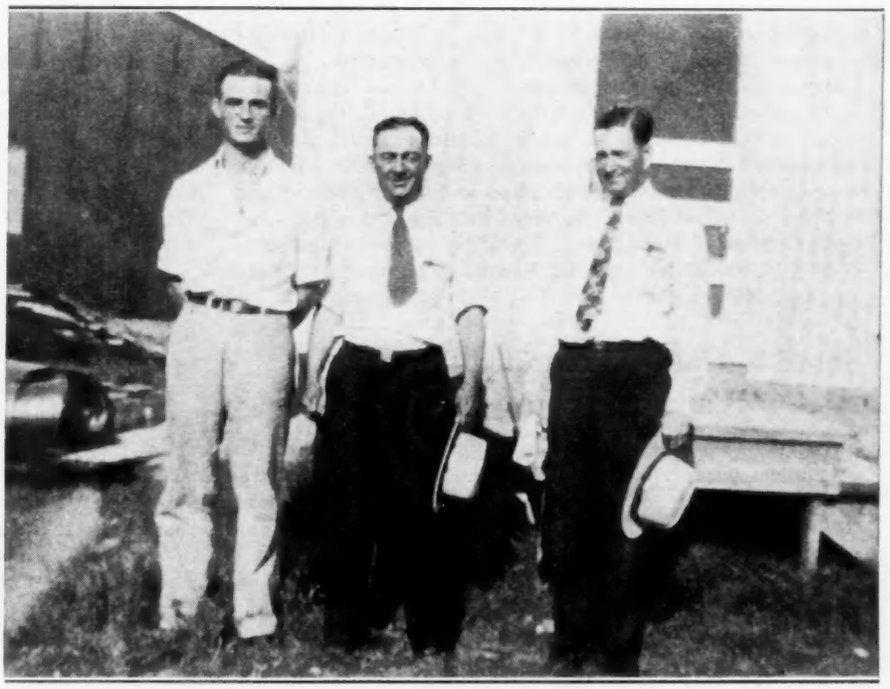
A Photographic Record of Who's Where in East Texas



Left to right, at Primrose, East Texas: Warren Gray district manager, Republic Supply Company in Arkansas, North Louisiana and East Texas; F. F. Stagg, Republic store manager at Primrose; O. G. Murphy, head of Marine Oil Company, El Dorado, Arkansas, and a leading figure in the industry in that state; and Charles H. Lane, president, Hydraulic Equipment Company, Houston, and a veteran operator for nearly 20 years in the Gulf Coast Country.



Homer Thornhill, W-K-M Company field representative with Charley Thornhill, Baker Oil Tools, Inc., field representative, his brother, who have been selling to the oil country all their adult lives.



Left to right: W. P. Davis, store man for Lee C. Moore at Willow Springs (Longview) who was transferred from Hobbs; R. G. Brasher, Parkersburg Rig & Reel district man who moved from McCamey, West Texas to Kilgore; and J. R. Roberts, store manager for Lee C. Moore, now living at Tyler after moving into East Texas from the Big Springs district.

Oil and Gas Pipe Line Activities

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Phillips Completes Pipe Line From Ritz-Decker-Garrett Pool

Wichita, Kansas. — Phillips Pipe Line Company completed and put in operation, Saturday, October 31, its six-inch line from the Ritz-Decker-Garrett area in McPherson County. Authorization for the line was made August 10, 1931, and actual construction commenced about September 1.

The new line extends from near the town of Canton to Thrall, a distance of 70 miles, where it ties in with the company's main line to Kansas City. Capacity is given at 7500 barrels daily and it is understood that the company is to take an average of about 5000 barrels daily.

Transportation facilities now include pipe lines belonging to Prairie Pipe Line Company, Shell Pipe Line Company, Phillips Pipe Line Company, White Eagle Oil Corporation, a 13-car loading rack owned by Shell Petroleum Corporation and a 10-car rack belonging to Stanolind Crude Oil Purchasing Company. Estimated capacity is approximately 25,000 barrels daily.

Four Applications Made For North Dakota Pipe Line Right

Bismarck, N. D.—There are four applications before the North Dakota Railroad Commission for permits to lay natural gas pipe lines in the state. Montana-Dakota Power Company, subsidiary to Minnesota-Northern Power Company of Minneapolis, wishes to extend its system, which ends at Williston, 100 miles to the eastward to the town of Minot, and to operate distributing systems in municipalities and the territory adjacent to the line. It is also petitioning to extend its line from Bismarck farther eastward.

Minot Gas Company of Minot, South Dakota, is applying for permission to lay a line from its holdings in the Baker-Glendive field (Eastern Montana) to Minot; North Dakota-Minnesota Pipe Line Company, Fargo, North Dakota, would lay a line between Kenmar and Minot, Minot and Grand Forks, and Meche, to serve intermediate points; and E. J. Lamber of Tulsa, would lay a line from the gas fields in the Mouse River loop in Renville County to the city limits of Minot.

Small Refinery is Planned for Shallow Callahan County Area

Ranger, Texas.—Crude market relief for a large number of shallow pumpers in Callahan County section of Central West Texas will be attained shortly as result of Octane Refining Company, subsidiary of Woodley Petroleum Company, Shreveport, having started construction work on a 1200-barrel daily capacity skimming plant at Chautauqua, located on the Texas & Pacific Railroad. Woodley Petroleum Company has about 650 barrels of settled production in this shallow oil area, and in the past has shipped crude to distant refineries, having its own field line and a 55,000-barrel steel tank. It is planned to purchase crude from other operators in the area in fulfilling the daily requirements of the refinery. G. R. Gaysinger is in charge of construction work on the refinery.

Texas to Control Gas Wells Under Recently Enacted Law

Austin, Texas.—Regulating the purchase of gas throughout Texas, the railroad commission November 3 issued the first rules under the recently enacted bill which requires the ratable purchase of gas by the common purchasers of Texas.

Gas must be purchased without discrimination in all fields of the state where wells may reasonably be reached by the trunk lines of common purchasers. The commission has final authority in regulating the length of extensions to wells which may be required. The purchaser may not discriminate in favor of his own production against that of another producer of gas of like grade and quality.

In cases where the supply exceeds the demand, the gas shall be prorated among the producers in proportion to the potential production which they own. Special orders governing peculiar conditions in each field are to be issued by the commission as conditions demand. Purchasers of gas are required to furnish all connections for each well up to and including the meter. Equipment from this point to the well is to be furnished by the producer. Purchasers are required to place a line ample to take care of the production from the well.

Producers must furnish a certificate from the railroad commission that the well has been completed according to the rules of the commission, but a temporary connection may be made during the time before such certificate is received. Marketable gas, only, must be purchased, and this is defined as free gas, casinghead gas, or residue gas, which is free from liquids, corrosive substances, or other foreign matter, and which contains sufficient heat units to meet the market requirements of the purchaser. However, if the purchaser is taking his own gas that does not meet with these requirements, he must take the gas of other producers in the same pool on a ratable basis. The purchaser, however is only required to take one class of gas, that is, either casinghead, residue or free gas.

Purchasers are not required to install compressor stations or treating plants for purification of gas; but should they have these installed for their own use, gas of other producers must also be accepted for such treatment. Measurement of gas shall be by 1000 cubic feet computed at a base pressure of two pounds above an absolute atmospheric pressure of 14.4 and at a temperature of 60°F. It shall be corrected for pressure according to Boyles law, and for specific gravity by the balance method.

Producers may apply for connections and purchasers must offer them a fair contract, after which connections shall be made promptly and gas taken ratably. Connections made shall be for a period of one year, unless otherwise agreed upon, after which time the purchaser must meet the price offered by other purchasers, or the well may be disconnected by the producer after 30 days' notice. Should the title to any gas be questioned, payment may be withheld by the purchaser, or be placed in escrow. In other cases a statement of gas run by the purchaser shall be furnished the producer on or before the twenty-fifth day of each month, together with a check for payment in full.

Personal Mention—Men You Know

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W. L. MELLON was elected a member of the executive committee to succeed the late Harrison Nesbit, at the meeting of the board of directors of Westinghouse Electric and Manufacturing Company, October 28, at East Pittsburgh, Pennsylvania.

GEORGE H. McINTYRE, general superintendent for Continental Oil Company in Texas and New Mexico, with headquarters at Fort Worth, and his wife each bagged a deer while hunting in New Mexico last week.

A. B. CAPERS, who has been incharge of proration details in the East Texas field since the Texas Railroad Commission assumed actual charge of its operation with state paid employes, resigned October 31, and joined up with the 124th Cavalry as a captain. Capers was a major of artillery with the 90th Division in the World War, having graduated from the first officers' training camp at Leon Springs, Texas. The return of Capers to uniform will enable him to continue his proration duties under Brigadier General J. F. Wolters during the period that the railroad commission is technically prevented from carrying out its proration and conservation work in the East Texas field because of being restrained by a temporary injunction granted in federal court at Tyler October 13 to Brock-Lee Oil Company.

RAY T. SOPER, formerly warehouseman for Venezuela Gulf Oil Company at Lagunillas, has joined the staff of Standard Oil Company of Venezuela, and will be stationed at Caripito, in eastern Venezuela.

W. H. MURRAY, JR., son of Governor Murray of Oklahoma and a member of the producing department of Standard Oil Company of Argentina, is returning to his assignment in northern Argentina after a holiday in the United States. Mr. Murray is a passenger aboard the S.S. "American Legion," of the Munson Line, which sailed from New York on October 31 and is expected to arrive at Buenos Aires on November 18.

W. M. KECK, president of Superior Oil Company of California, has returned to Los Angeles from an extended trip through East Texas.

WALTON E. GILBERT, formerly petroleum engineer for Shell Oil Company at Los Angeles, is now located in Pasadena.

KENNETH R. KINGSBURY, president of Standard Oil Company of California, is visiting in New York and other Eastern cities. He sounded an optimistic note when asked about the California oil situation.

—Blank & Stoller
M. A. AP RHYS PRYCE

M. A. ap RHYS-PRYCE, until recently chief production engineer for Caribbean Petroleum Company and superintendent of production operations for that company and for Venezuelan Oil Concessions, Ltd., and Colon Development Company, Ltd., Royal Dutch-Shell subsidiaries in the Maracaibo district, passed through New York last week en route to London, where he will undertake a program of research in production engineering which is expected to culminate in the publication of a book on the theory, practice, and economics of oil production.

F. G. DELANEY, independent producer of Los Angeles, has returned to the West Coast after a trip through the southwest Texas fields.

VICTOR DE METZ, managing director of Steaua Romana, is visiting in California.

DR. NOEL H. STEARN, chief geologist for W. C. McBride, Incorporated, and Silurian Oil Company, has been placed in charge of the exploration and land departments of these organizations, with offices in St. Louis. Dr. Stearn is co-inventor and developer of the Hotchkiss Superdip magnetometer and is inventor of several other geological devices.

FRANK M. BROODER of Lander, Wyoming, well known mining and oil man in Wyoming, and at one time a prominent banker in the Black Hills mining sections, died Tuesday, October 27, at Bishop Randall hospital in Lander, where he had been taken from the hospital at Fort Washakie by airplane following a stroke of paralysis which he suffered on his way home from the DuBois country.

For several years Mr. Brooder had been vice-president and general manager of Dallas Dome Wyoming Fields Company and when that concern's holdings in the Dallas and Derby fields were sold to Atlantic Pacific Oil Company a few years ago, Mr. Brooder started a unique chain of service stations in the Lander community and devoted himself to their management. He was a veteran of the Spanish American and World Wars, and was with his regiment on the Mexican border. He is survived by his widow, two sons and two daughters.

E. M. BUTTERWORTH, geologist for Standard Oil Company of California, is doing geological work for his company in the Dutch East Indies. He was formerly located at Los Angeles.

Oklahoma--Kansas Field Notes

FLOYD SWINDELL, ***Staff Representative, Tulsa, Oklahoma***

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Oklahoma City Allowable Is 180,000 Barrels Daily

Oklahoma City.—Production from the Oklahoma City pool for the week ending Saturday, October 31, was 184,730 barrels, an excess of 4730 barrels over allowable. Under new proration orders issued on that date and to be in force during November and December, daily allowable was set at 180,000 barrels, being six per cent of an estimated potential of 3,000,000 barrels daily. Under-production to date was set at 3,600,000 barrels. Of the total daily allowable of 180,000 barrels, 18,000 barrels have been allocated to under-produced wells and the remaining 5½ per cent to all other wells eligible to produce under proration regulations. Under-produced wells will be allowed one-half of one per cent of their under-production each day. All wells whose potentials have not been determined since October 10, 1931, will be required to take gauges prior to November 5, or shut in until potentials are determined.

E. R. Hughes, member of the corporation commission, questioned authority of the commission to set regulations for proration since Governor Murray is still maintaining martial law in the Oklahoma City pool and other flush areas. At commencement of the hearing on Monday, October 26, Hughes brought up this point and asked for an answer before the hearing was concluded. So far as can be learned no answer was forthcoming. This is an important point and one which apparently will have to be decided by the Supreme Court at some time in the future. Although the Oklahoma constitution seemingly states without question that civil authority shall never be supplanted by the military power of the state, Governor Murray's martial law order of August 5, 1931, was interpreted as revoking civil authority in favor of military. Mr. Hughes' question was based on the request of operators for a proration order from the corporation commission while martial law was the recognized authority.

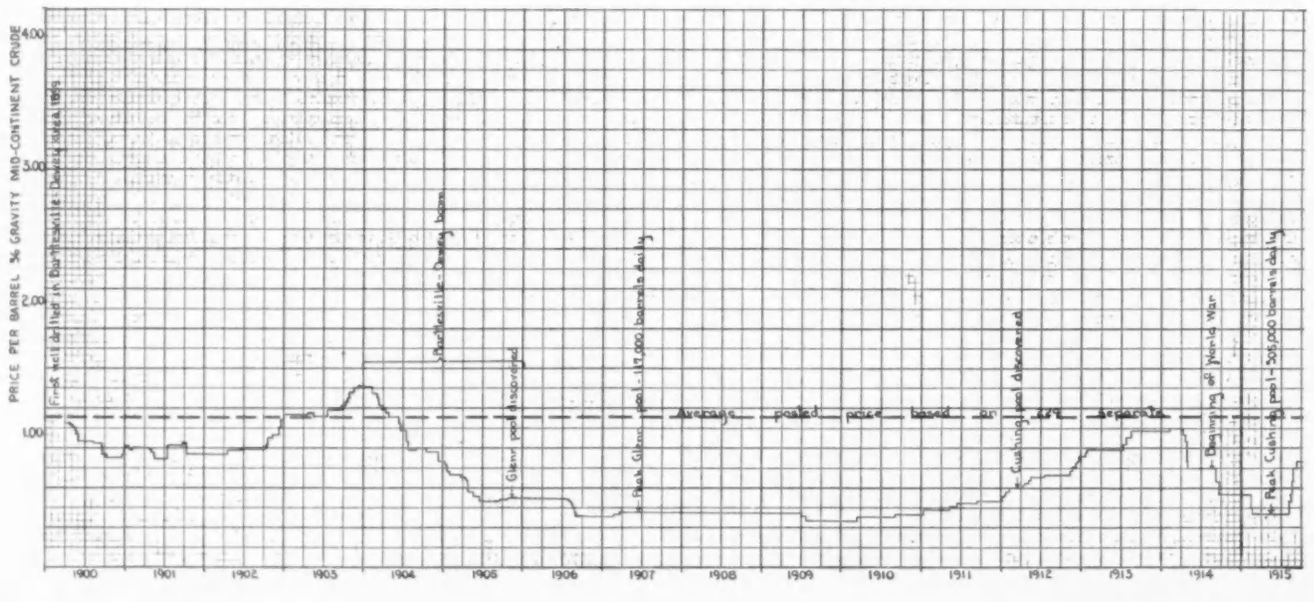
One of the outstanding items of the week was the performance of Westgate Oil Company's Carey 3, SW SE NW SE Section 34-12n-3w, one of the most northerly producers in the pool. Completed late in August, 1931, it produced 8463 barrels in 2 1/3 hours with gas at the rate of 62,000,000 cubic feet. This gave it a 24-hour potential of 87,048 barrels. On a four-hour gauge last week it produced 16,090 barrels for a 24-hour potential of 96,540 barrels. Production is from 209 feet of Wilcox topped at 6322 feet.

Daily average outlet for the field for the week ending October 27, was as follows:

	Barrels
Capitol P. & R.	29
Century Petroleum Company	2,566
Champlin Refining Company	2,352
Continental Oil Company	12,118
Empire Oil & Refining Company	29,775
I. T. I. O.	5,128
Magnolia Petroleum Company	3,808
Oklahoma Pipe Line Company	11,105
Operators	3,207
Petroleum Prod.	1,250
Prairie	960
Shell	1,065
Sinclair-Texas	32,060
Stanolind	54,542
Tidal	4,396
Wilcox O. & G.	3,222
Total	167,583

There are now 843 producers, 27 active operations, and 39 rigs, locations and wells shut down. A number of old

Trend of Mid-Continent Crude



producers are being put on gas lift since re-opening of the pool October 10. At that time many of the Arbuckle lime and Lower Simpson producers refused to flow or had abnormal production decline. Indian Territory Illuminating Oil Company placed its Ivanhoe 2 on gas lift; it is the first Wilcox sand well to be artificially produced.

Phillips Petroleum Company completed Dehn 1, NW SW NE Section 3-11n-3w, at total depth of 6447 feet in Wilcox sand. No gauge was available. This is among the few wells that have nine-inch casing set on top of the producing formation. Four other wells completed by Phillips Petroleum Company followed this casing program and obtained larger initial gauges than any of their offsets. Cicero I. Murray, among his various proposals at the recent proration hearing, suggested a method whereby potential gauges would be based on a standard size oil string. Adoption of this proposal would eliminate the advantage of larger initial production through the use of larger flow strings, but the practice can be defended on other grounds and likely will be adopted by other operators. Mid-Kansas Oil & Gas Company was the first to use a larger flow string on top of the producing horizon.

Oklahoma City Operators to Witness Gauges at Seminole

Seminole, Oklahoma.—Oklahoma City operators are to have witnesses at the taking of potential gauges in the Seminole district, which were commenced on November 1 and will be concluded on November 27. The following schedule was announced by Ray M. Collins, state proration umpire:

Allen and Sasakwa—November 1 to 10, inclusive—full production.

Old Earlsboro and Earlsboro Townsite—November 2 to 11, inclusive—full production.

St. Louis (excepting Shell, Smith which will be open November 15-24, inclusive)—November 3 to 12, inclusive—full production.

Seminole and East Seminole—November 4 to 13, inclusive—full production.

West Asher, Konawa and the following leases in Carr City: Gypsy, L. Tiger; Carter, Rogers; and Prairie, Hyde; also the following leases in South Earlsboro: Amerada, Grounds; Gypsy, Halbutta; Magnolia, Carbitcher and Grounds; and Prairie, Grounds; will be opened November 5 to 14, inclusive—full production.

East Earlsboro, Mission, and the following leases in South Earlsboro: Amerada, Edwards; Eason, Anderson; Stanolind, Lena; and Sinclair, Jones; will be opened November 15 to 24, inclusive—full production.

Little River and East Little River—November 16 to 25, inclusive—full production.

Bowlegs and Searight—November 17 to 26, inclusive—full production.

Carr City (excepting leases taking potentials November 5 to 15) and Maud will be opened November 18 to 27, inclusive—full production.

West Seminole—7 A. M., November 2 to 7 A. M., November 3—24-hours production.

Wewoka Townsite—7 A. M., November 4 to 10 A. M., November 4—3 hours production.

Fish pool—7 A. M., November 3 to 7 A. M., November 4—24 hours production.

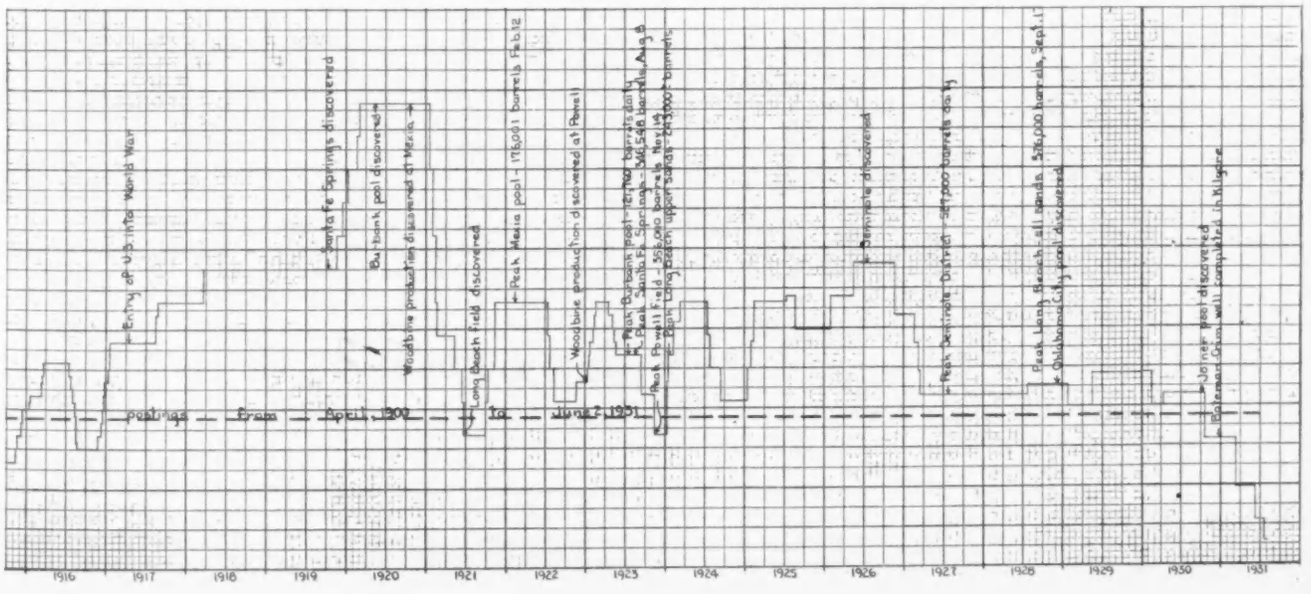
Amerada, Chase and Texas, Sandlin—7 A. M., November 3 to 7 A. M., November 4—24 hours.

Chandler—6 A. M., November 5 to 6 P. M., November 5—12 hours production.

Superintendents on all leases that are being gauged for potential will witness the gauging of all offset properties and sign the written report which is to be filed with the umpire.

Seminole pools were last gauged on the 10-day, open flow or full production plan during the first 15 days in March, 1931, 12 pools showed an excess of more than 10,000 barrels daily over the estimated potential. Prior to this potential had been established in May, 1930, and a percentage per month decline—factor applied. There is little doubt that the district will now make its estimated potential and it would not be surprising to see an excess at least as large as that which was recorded in March.

Prices Over Thirty-Year Period



Latest Reports on Barton County Well Less Favorable

Wichita, Kansas.—Latest reports on Hilligos et al's Isern 1, CSW SE NE Section 12-20s-11w, new discovery well on the Ellsworth Arch in Barton County, were not so favorable, although it is already proven to be a commercial producer. During the first hour following penetration of the pay, oil filled 1000 feet of hole and led to the belief that it would be a large well. On the first swabbing test it produced 105 barrels in five hours, swabbing down 1700 feet below the surface. Later it yielded only 283 barrels in 23 hours swabbing and the latest test of 19 hours on the swab showed 423 barrels, with the fluid column lowered 2000 feet. The pay, which is believed to be Arbuckle limestone (siliceous), was topped at 3313 feet and penetrated only two feet. On the basis of the last test it cannot be expected to do better than 500 barrels in 24 hours but production may be increased by deeper drilling.

Ford County

Carter Oil Company et al abandoned their Community-Everett 18 CNE Section 22-29s-21w, deep wildcat test in southeastern Ford County. This test was interesting from a number of viewpoints. It was located in a county which has had only three tests and about which little is known geologically. Tops of the important formations were as follows: Mississippi limestone, 5278 feet; Viola limestone, 5816 feet; Simpson formation, 6008 feet; Wilcox sand, 6066 feet, dry; Arbuckle (siliceous lime), 6080 feet. Depth at the time of abandonment was 6206 feet, with nothing showing.

Schurr-Raymond

Slick, Pryor and Lockhart's Schurr 3, NW NE SW Section 21-20s-10w, encountered top of the siliceous lime at 3317 feet and had a hole full of oil at 3336 feet. Operators will pull big pipe and test on the swab. This is the thirteenth oil producer for the pool and one well, originally completed as a gas producer, is now being deepened and will be converted to oil from lower horizons.

No important completions were made during the week in the Ritz-Decker-Garrett area of McPherson County although several wells were drilling in the producing horizons. Foarker et al's Tinsley 1, NW NW SW Section 5-20s-1w, was drilling at 3470 feet, with 3000 feet of fluid, mostly water, was standing in the hole. Top of the Viola lime was encountered at 3441 feet, after having a hole full of water at 3020 feet to 3060 feet.

San Miguelito Structure Test Plugged Back, Makes Producer

Ventura, Calif.—Chanslor-Canfield Midway Oil Company lost a chance to establish a new depth record for production in Hobson A2, a wildcat on the San Miguelito structure, but by plugging back from 10,030 feet to 7825 feet a production of about 125 barrels has been obtained on the compressor. The formation now being tested includes about 350 feet more than was included at 7479 feet for the first production test more than a year ago. The net production is about 180 barrels, but the fluid shows a cut of nearly 40 per cent. This well was tested at 10,030 feet, but made a very poor showing with so much hole open.

Continental Oil Company has recemented the nine-inch casing at 6472 feet in Grubb 1, which is commonly referred to as the discovery well in the new field. The liner was recovered and hole bridged for cementing the water string. This well flowed at a commercial rate for some time, but should not be termed a completion.

Three Libel Suits Follow Investigation of Records

Oklahoma City.—As a result of an investigation launched several weeks ago into the records of the Oklahoma City pool umpire's office, three libel suits have been filed as a counter-action to suits and charges made by royalty owners against operators. The first action came when O. N. Jaye, manager of Royalty Owners Protective Association, demanded a grand jury investigation of oil runs. Possibility that this investigation might fall through was seen late last week when only 80 of the necessary 100 petitioners were determined to be taxpayers. Letters were sent to 30 signers of the petition and at least 20 of these must prove that they are taxpayers or a new petition will be necessary.

Vincent and Mary Sudik, royalty owners under lands leased by Indian Territory Illuminating Oil Company, through their attorneys, Robert Burns, Lieutenant Governor of Oklahoma, F. W. Church, and Lynn Adams, filed suit against their lessee, demanding payment of $303.80 royalty payment allegedly due for 1930 and an accounting for 1931. Indian Territory Illuminating Oil Company then filed a libel suit, naming Vincent and Mary Sudik and their attorneys. This suit alleged that statements made in the Sudik's petition, in which it was charged that false returns of oil runs had been made, were the result of a conspiracy "to slander, libel, and defame the good name and business standing of the company and were made public in furtherance of such conspiracy." This action demands $20,000 damage.

Indian Territory Illuminating Oil Company then filed suit for $50,000 libel damages, naming O. N. Jaye, Royalty Owners Protective Association; M. J. Theimer, its president; Phil Sherry, vice-president; A. D. Rochau, secretary-treasurer; and Howard A. Tucker, editor of the Oklahoma City Oil Journal. Following closely on this suit Oils Incorporated instituted libel action against Charles D. and Mary Sautbine, asking $50,000 damage for alleged false charges made when the Sautbines sued Oils Incorporated on October 9 for royalty allegedly reported runs from its Ross 1 well. Oils Incorporated also filed suit against Ray Weems, state treasurer, and the Oklahoma tax commission for $1917.17 which the petition said was paid as gross production tax under protest upon the order of the tax commission October 14.

The Sudik suit against Indian Territory Illuminating Oil Company was dismissed at the request of Vincent Sudik, according to Robert Burns, and the Sautbine suit against Oils Incorporated was dropped when attorneys found that the lessors did not own all of the title they had indicated. In the mean time five men confessed participation in an attempt to break into Champlin Refining Company's office to secure oil production records, according to Mort Brown, assistant county attorney. Police said the men claimed they had been offered $200 by an Oklahoma City oil man, and attorney and a royalty owner to steal production records of Champlin Refining Company in the Oklahoma City pool.

Salt Water Disposal Company Votes to Reduce Capital Stock

Houston.—Stockholders of Orange County Salt Water Company voted in a meeting at Houston October 27 to decrease capital stock of the concern from $100,000 to $25,000, due to the fact that operations in the Orange oil field have declined materially during the past several years.

News From California Fields

BRAD MILLS, ***Staff Representative, Los Angeles, California***

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Elwood Operators Agree to Postpone Sespe Development

Santa Barbara, Calif.—An agreement among principal operators in the Elwood field to postpone development of the Sespe sand was a very important step toward maintenance of curtailment provisions in a field which might cause much trouble within a short time. Barnsdall Oil Company and Rio Grande Oil Company, joint operators and discoverers of both the Vaqueros and Sespe zones, have entered into an agreement to suspend operations for a period of at least several months.

Pacific Western Oil Company made two new locations immediately after the first Sespe producer was completed two weeks ago, but has agreed to stop work on these deep tests. Bankline Oil Company will complete its drilling well in the Vaqueros zone, while two wells being drilled by Barnsdall Oil Company will also be stopped in the upper zone. The suspension of drilling operations in some of the wells and agreement to stop others in the Vaqueros sand have at least temporarily removed the field from the critical class.

Barnsdall Oil Company and Rio Grande Oil Company's discovery well in the Sespe sand has been shut in. This new producer flowed at a 2800-barrel rate and set a new record for Sespe production in this district. The large mainland leases are offset by tideland leases which were developed in the Vaqueros sand under adverse conditions. The agreement to postpone developments in the Sespe sand was in direct contrast to the dissension which marked a part of the upper sand development.

Middle Dome at Kettleman Proves a Disappointment

Coalinga, Calif.—The Middle Dome at Kettleman Hills has proved a distinct disappointment, and it is doubtful whether it will ever become a factor in the development of the field. It is still too early to condemn definitely the Middle Dome in the Temblor formation, but the odds now appear overwhelmingly against a good production from this zone. Petroleum Securities Company is coring ahead at 8800 feet in Burbank 1, with the formation running to a very hard gray sand. The absence of cuts and odor is viewed with alarm by companies holding acreage on the Middle Dome. The porosity of the sand is so low that it is doubtful whether it could have served as a trap for oil. Some of the cores show a porosity almost as low as that of solid granite, but others are much more porous. Nearly 1250 feet of Temblor formation has been drilled below the last shutoff, and failure to encounter a black oil zone forms a sharp contrast with conditions on the North Dome. Absence of water was taken as a very favorable indication and still points to a less alarming outcome, but the mere fact that water is not present doesn't make an oil well.

The true Temblor formation should not be much thicker on the Middle Dome than on the North Dome, and if this proves to be true, not more than 500 feet should remain to be penetrated. Since no other well has been drilled to such a depth on the Middle Dome, only theories are used as guides to predictions. The Middle Dome does not embrace more than 3000 acres, but is equally as well defined from a surface standpoint as the North Dome. Most geologists have contended that it should be as rich per acre as the North Dome, since about the same formations are present. The shale bodies are even slightly thicker than on the North Dome, but this thickness did not prove an advantage on the South Dome. It now appears that the North Dome has been the trap for a vast area, and that the Middle and South Domes have been neglected by the forces which worked to store the oil and gas in the North Dome.

North American Oil Consolidated's Blauvelt 1, an outpost test on the North Dome is being cored just above 9000 feet in a hard gray sand which shows only faint cuts. This well is outside of the proven area, but it stands about an even chance at production, according to an analysis of best geological reports. Judging strictly from surface observations, the well does not seem to be outside the producing limits, but the immediate area must be regarded as unproven until production is obtained. Drilling at such a great depth is proceeding slowly and the well is now potentially one of the deepest producers in the world.

Average production of the 21 producing wells is above 2800 barrels, with several producers completely shut in. Gas production averages about 300,000,000 cubic feet daily. The latest field reports gives Kettleman North Dome Association 25,350 barrels from six wells; Standard Oil Company, 20,000 barrels from nine wells; Union Oil Company, 4000 barrels from one well; Superior Oil Company, 3000 barrels from one well; Associated Oil Company, 2600 barrels from two wells; Petroleum Securities Company, 2600 barrels from one well, Shell Oil Company, 1725 barrels from one well. All wells are beaned back to produce far below their actual potential yields.

Long Beach Deepening Operations Interesting

Long Beach, Calif.—Deepening operations in the Long Beach field have assumed a more decisive nature, even if fewer tests are under way than were recorded a few weeks ago. Testing of levels down to 8600 feet show the determination a few operators have, but there is little likelihood that a drilling campaign will materialize following discoveries below 8500 feet.

The 8000-foot Los Cerritos zone was disappointing, and several wells which were tentatively held for deepening will not be carried deeper at this time. This new production was enough to increase the field total a few thousand barrels, but the risk involved was too great to increase the activity to a level which would have been expected under more normal conditions.

Cleaning out operations are on the increase, and inquiries for royalties, new equipment and small leases have increased. Long Beach has long been the key to the spot oil market in the Los Angeles basin, and smaller operators are striving to increase their potential yields. Small premiums have been reflected in increased field work. Many shallower wells could be placed in good condition.

Huntington Beach Deep Test Down to 9000 Feet

Huntington Beach, Calif.—Superior Oil Company is drilling ahead just short of 9000 feet in Eberle 1, a deep test at Huntington Beach, and the very hard gray sand is showing some gas. The installation of a blowout preventer and use of weight materials are taken to mean that some trouble has been experienced in holding the pressure. This well should prove a conclusive test of the very deep zones in this part of the field. It has become one of the deepest tests yet drilled in the Los Angeles basin.

W. E. McCaslin has made little headway in Transport 17. After swabbing for several days, the best that could be obtained was a mixture showing a small amount of oil and gas. Fluid enters the hole at a rapid rate, but plugging has reduced the incoming water. Transport 17 was drilled to 8365 feet and has been tested at various levels below 5800 feet. Several shots below 7800 feet failed to improve the condition of the well.

Potrero Townlot District Activity Again Declines

Los Angeles, Calif.—The recent increased activity in the Potrero townlot district has declined sharply and the field should again settle back to a few routine drilling operations. At irregular intervals the field flares up because of some deeper discovery, but it has not yet failed to settle back to a low level of activity.

The cause of the most recent deeper drilling was the completion of Beloil Corporation's Coffin 1 as a fair producer around 6500 feet, but no more completions have been recorded since that time. Wilshire Oil Company has reached a depth of 3000 feet in Potrero 2, a test on the large lease taken over some time ago. Several leases have changed hands in the townlot area, and deepening operations would increase, should a few more good completions be finished.

The Potrero field appears badly faulted and the formations stand on end to prevent a uniform development. A good completion may offset an outright failure, due to the dip of the formations and the difficulty in obtaining a water shutoff.

Lost Hills Field Deep Test May Not Become Flowing Well

Bakersfield, Calif.—Lincoln Petroleum Company has recemented Theta 1A, a deep test in the Lost Hills field, under a pressure of 1500 pounds, and will again test about 100 feet of oil sand and shale below the 4¾-inch shutoff. An examination of cores taken just above bottom at 5329 feet show oil and gas, but there is some doubt as to whether a flowing well will be completed. A similar zone in another field made a small amount of oil, but the well did not flow.

General Petroleum Corporation should soon regain all of the hole lost in Lost Hills 1301, having plugged back several hundred feet from 4399 feet. New hole is being made at 4050 feet. The high pressure water zones were cut in this well without the use of special pressure equipment.

The Lost Hills field has been a disappointment in the deep zones, but the structure should not be condemned until more conclusive tests have been made. Belief that the Temblor zone will be found below 6000 feet is held by some, but the formation has been listed above 5000 feet by some geologists.

▼ NEW MEXICO-ROCKY MOUNTAIN AREA ▼

Salt Valley Structure, Utah, Test, Bottomed at 4243 Feet

Moab, Utah.—Joint test of Utah Southern Oil Company and Mountain States Petroleum Company on the Salt Valley structure in Grand County, Utah, is bottomed in salt at 4243 feet. This test is intended to go to the lower Pennsylvania and Ordovician formations lying below the salt beds in the eastern part of Utah. The salt beds have already been penetrated to a greater depth than their total thickness had been estimated, and inasmuch as there is no datum or correlation from which to revise the estimate of their total thickness, there is no indication at what depth the objective horizons may be encountered. Well developed a flow of about 15 barrels per day of high gravity crude in one of the higher sands.

Ohio Oil Abandons Operations On Cody Structure, Park County

Cody, Wyo.—Ohio Oil Company is abandoning its operations on the Cody structure in Park County, Wyoming, where it has drilled two wells to the Embar. The first well to be abandoned was one given up some time ago, and the test which is now being plugged was completed in March, 1930, for an initial production of 75 barrels on the pump. It has gradually declined and has finally turned to water. Oil was 18 gravity and total depth was 4540 feet. Ohio Oil Company does not plan any further operations on this structure.

Possibilities of Dakota Sand Arouse Interest in Colorado

Denver, Colo.—The possibilities of the Dakota sand in the Northeastern Colorado territory are responsible for most of the interest in the district this week. A statement from the president of Colorado Associated Oil Company, W. A. Myers, issued last week, set at rest the many flying rumors concerning that company's discoveries on the Fort Morgan structure in the Dakota sand. Mr. Myers said that the test had found the Hygiene sand to be about 150 feet thick and to be well saturated with gas; the Muddy sand was about 22 feet thick, was topped at 5759 feet, but did not give particularly promising indications; and the Dakota sand, topped at 5830 feet and drilled in 15 feet, was a good porous sand heavily saturated with high gravity crude accompanied by gas in the upper part of the sand. The well is to be tested as soon as casing arrives from the mills and is cemented—probably not before another fortnight.

Importance of this discovery, if it is verified, is great since it increases the proved producing horizons in the field which to date numbered only one—the Muddy—on the Greasewood Lakes structure from which three wells have been producing. However, the discovery well is now being deepened to the Dakota and much interest attaches to the outcome of that work.

There are four wells near completion on the structure known as Greasewood dome in Weld County, the discovery structure in Southeastern Colorado. The first will probably be Reiter-Foster's Johnson-Juhl 1. It is said to have checked about three feet higher on structure than the last

completion, Continental Oil Company's Briggs 1, one-half mile to the east.

A water system for the field is to be built by David E. Grimes (Grimes Pipe & Supply Company) and his Denver associates. Water rights have been purchased and the work is to be started immediately upon completion of the four wells now nearing the Muddy. An electric power plant is also a possibility; Ray Phebus of Thermopolis, Wyoming, has applied to the utilities commission for permission to build such a plant.

Continental Oil Company has called for bids on a pipe line from the field to railhead at Hardin, and others are reported to be contemplating lines to serve the field.

Report Says Cut Bank Gas Area Receives Northern Extension

Great Falls, Mont.—A northern extension to the Cut Bank gas field, Northern Montana, was reported by the O'Niel interests when their Cummings 1, about six miles due north of the southernmost gasser in the district came in for about 28,000,000 cubic feet. The gas being developed in this field will supply Montana Power Company's long natural gas pipe line to cities and towns in the southwestern part of the state.

Lingle, Wyo.—Phillips Petroleum Company has rig up for first in a series of core drilling operations to be conducted on the Lingle structure, Goshen County, Eastern Wyoming. The company has recently finished 14 core tests on the Shawnee-Keeline structure, southeast of the Lance Creek oil field.

Cheyenne, Wyo.—Prairie Oil & Gas Company of Wyoming will core drill another structure on the Warren Livestock ranch southwest of Cheyenne for sub-surface geology. The first test the Prairie started on this structure was abandoned early this year because geological indications were that it would require extremely deep drilling to reach the objective sands. The work to be started now is on a structure which seems to be located higher geologically.

Craig, Colo.—Ohio Oil Company has been granted a franchise to supply the town of Craig, Colorado, with natural gas to be developed on a structure four miles northeast of the community. Location is spotted on SE Section 9-6n-91w, on the Bogenschutz ranch, for the first well to be drilled in a program of several to develop the gas necessary. First gas sands are expected around 3000 feet, although the test will be equipped to drill to 6000 feet if necessary.

Fayette, Idaho.—The R. J. Berry test on the Crystal dome structure which gave indications a year ago of being a commercial gas producer is now bottomed on top of the gas sand and has set casing before drilling in. No showings were reported.

Houston.—C. M. Joiner's (Red Bank Oil Company's) J. A. Foster 1, Milam County wildcat, is pulling casing to abandon at 4680 feet and skid the derrick to a new location nearby. Foster 1 spudded in June, logged the Pecan Gap at 3217-3408 feet and the Austin chalk at 4410-4575 feet, and had a gas show at 2183-96 feet. It is located 12 miles south of Cameron, in the A. G. Perry Survey.

Commission Issues Special Rules Governing Panhandle

Austin, Texas.—The state railroad commission November 3 issued special rules governing common purchasers of gas in the Panhandle. The counties of Moore, Potter, Hartley, Oldham, Hutchinson, Carson and part of Gray are designated as the West Panhandle gas field. Only one well may be drilled to each quarter section, except where smaller leases already exist. One well may also be drilled on each fractional unit not less than 40 acres.

Common purchasers must publicly post monthly full descriptions of each well from which they purchase gas and the amount of the withdrawals from said wells. Common purchasers are not required to make connections to wells farther than two miles from their trunk lines or gathering systems, but producers may run lines to a point within this range, after which purchasers shall make connections.

Purchasers are not required to connect to wells whose flow volume is less than 5,000,000 feet, nor must they connect to wells producing through a bradenhead unless such gas is brought to the trunk, or gathering line through lines constructed by the producer, upon which condition such gas shall be taken ratably. Gas from two or more wells whose total volume is five million feet may be combined, and the gas shall be taken ratably, as though it were coming from one well. Once a connection is made, it shall remain for one year, or so long as the purchaser meets the price of any competition; otherwise the seller may disconnect after 30 days' notice.

Seeks Water Shut-Off in North Belridge Field Test

Bakersfield, Calif.—Belridge Oil Company recently pulled the liner in No. 49-35, a recent completion in the North Belridge field, and has plugged bottom in an effort to shut off the water which prevented a successful production test a week ago. This well was drilled to 5595 feet and flowed at a 3500-barrel rate for a short time. The water cut increased to 40 per cent and indicated bottom water. This well offsets two small producers which fairly well defined the producing limits of the field. The company's No. 64-27 a deep test on the structure, has been drilled to 6700 feet, but no information as to formations has been given out.

The North Belridge field was a sensation in the Temblor formation, but only a narrow producing strip may be expected in this deep zone. The shallow zone also produced only along a very narrow strip. Several companies which held leases on the flank of the structure rushed in to develop their holdings more than a year ago, but one disappointment after another was met.

One of Three Wildcats in Burleson County Abandoned

Houston.—One of the three active wildcat wells in Burleson County dropped out of the picture this week when Mid-South Oil Company abandoned its Duckworth 1 at 3070 feet after having been shut down on top of a water sand at that depth for two weeks. Duckworth 1 was located near Clay Station.

Marek and Sons' A. Marek 3, located 2½ miles southwest of Tunis in the N. McFaddin Survey of Burleson County, is drilling in shale below 2060 feet, while Marts et al's Boyett 1, five miles southeast of Wellbourne in Burleson County, is shut down slightly below 3000 feet.

East Central Texas Field Notes

H. H. KING, ***Staff Representative, Fort Worth, Texas***

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Completions in East Texas Set New High Record at 175

Longview, Texas.—Added honors for the East Texas field were scored during the past week when 175 completions were recorded for the seven-day period, while the combined initial flow of these wells represented a greater total of new production than has ever been yielded by any single field during a like period. The number of completions probably surpasses the weekly quota of any field in the past, barring possibly a few shallow oil areas.

These new wells ranged in depth from 3452 to 3819 feet, and all were drilled with rotary equipment exclusively, with an average cost of about $20,000 each, or a total of approximately $3,500,000. When pumping equipment is later installed on these same wells their total cost will be increased $750,000, more or less.

This unusual number of wells marks the turning point in the volume of field operations, and resulted from major drilling campaigns launched late in September and early in October.

The Longview area contributed 77 completions, and the Joiner area yielded 51, while the Kilgore section of the field accounted for 47 completions during the week. Sinclair Oil & Gas Company was credited with 29 completions during the seven-day period, and Humble Oil & Refining Company held second place with 14 completions.

East Texas Allowable Cut Fails to Hold Down Production

Kilgore, Texas.—Reduction of the allowable production per well in the East Texas field from 165 to 150 barrels daily effective 7 a.m. October 29, failed to lower the output of the field below the 400,000-barrel level, which is a tentative maximum permitted. During the 24 hours preceding the 15-barrel cut, the field produced 437,019 barrels from 2666 wells reported on for the period, according to military authorities in charge of proration. On the first day that the cut was in effect the field yielded 400,802 barrels from 2655 wells reporting, with 18 off production and 32 completed wells not reporting.

During the seven-day period ending at 7 a. m. November 2, the field added 125 new wells, and on the last day of the period produced slightly above its limit per well in yielding 413,309 barrels of oil.

Pipe line runs, which includes receipts from lease tankage plus crude used by operators as fuel and road oil as well as that consumed in washing in new wells soared to a high mark late in October, owing to pipe line companies and operators having attempted to clean up stock tanks at the wells so as to be included in October oil payments.

Military authorities are effectively enforcing Governor R. S. Sterling's proration orders although the field is the most difficult of all prorated areas to handle by reason of having more operators, separate leases and total wells as well as having a greater production than has ever been maintained by a prorated field. It likewise has more trunk lines, local refineries and independent crude gathering units to be dealt with. Occasionally the military uncover practices of producers and pipe line companies that are in violation of the rules, but often such cases are due to a misunderstanding of orders, and violators are let off with a warning after appearing before the officer in command.

Commission Tightens Orders On East Texas Completions

Tyler, Texas.—Tighter restrictions on the use of poor quality casing and well connections in the East Texas field were ordered by the Texas Railroad Commission October 31. The new order also placed a ban on drilling in excess of four feet of Woodbine sand when same is encountered at a sub-sea depth of 3300 feet, or lower, as a means of lessening the danger of bottom hole water in future completions. This latter rule will not handicap operators any appreciable extent, as existing proration methods make no allowances for big producers. Any well that will flow steady from the top of the producing horizon will earn just as much allowance as those penetrating all the sand.

The commission has ruled that all future completions must be equipped with Christmas tree and other fittings and connections located above the surface that have been tested for a minimum pressure of 800 pounds. All wells

East Texas Production—Well Averages

Official data on proration of the East Texas field, as compiled each day by the military authorities, is listed below in table form beginning three days prior to the reduction of the allowable per well from 165 to 150 barrels daily:

Period ending 7 a. m.	Total Wells Completed	Wells Report Prod. ing	Wells Off Prod.	Wells Not Reporting	Pipe Line Runs	Total Prod.	Daily Average Per Well
October 27	2,639	2,621	9	9	432,767	429,042	163.7
October 28	2,662	2,627	13	22	443,660	433,670	165
October 29	2,682	2,666	13	3	428,631	437,019	163.9
October 30	2,705	2,655	18	32	472,414	400,802	150.9
October 31	2,725	2,681	18	26	425,643	405,218	151.1
November 1	2,746	2,684	14	48	459,737	405,081	150
November 2	2,764	2,737	20	7	.....	413,309	151

Note—Pipe line runs includes receipts plus crude used as fuel and road oil and for washing in wells.

must also be equipped with a bradenhead, or casinghead, that have been tested for use under a working pressure of not less than 800 pounds.

Elapsed time on drilling and completing wells in the field will be lengthened in the event the new rule requiring a test of the casing serving as the oil string is enforced. In order to combat casing leaks the operators must bail the fluid, or mud, down to 2500 feet or more below the surface, then measure the fluid level. This procedure takes place after the casing has been cemented, and prior to the drilling of the cement plug. The well shall be allowed to stand for 48 hours, then a second measurement of the top of the fluid is taken to determine shrinkage, or expansion. The casing and cement job shall be pronounced approved if the fluid has not raised more than two feet in the casing, but if the fluid level has raised more than two feet the well will be allowed to stand an additional 24-hour period. Then if the fluid level remains constant by actual measurement the owner will be allowed to proceed with the completion operations, but if this last measurement records a rise in the fluid, the casing will be condemned. Operators having condemned casing may run a second string of pipe, or cement the old string back to the surface.

Protest Hearing Delays Acreage Basis Proration

Tyler, Texas.—Placing of the East Texas field on an acreage proration basis, instead of continuing to distribute the field's production allowance on an equal basis for all wells regardless of their potential and size of lease will not take place before the latter part of the week as result of Governor R. S. Sterling having arranged to hear protests from operators objecting to the change at Austin November 4. A meeting of East Texas field operators was held under the auspices of the Texas Oil & Gas Conservation Association at Dallas, October 27, with about 80 per cent. This group voted unanimously to switch to the acreage plan of proration subject to approval by the governor who is personally directing proration in the field with the aid of the militia, as a means of getting prompt relief from excessive drilling. The acreage plan was offered by Charles F. Roeser, Fort Worth, temporary president of the above association.

Opponents to the acreage plan have succeeded in winning recruits for their ranks since the Dallas meeting, and the filing of protests with the governor resulted in action being deferred by him. The committee of seven operators appointed at the Dallas meeting to submit recommendations to the executive officer of the state amended the original plan agreed upon by the gathering at the suggestion of an independent operator, and this change gave rise to more protests from owners of small tracts which would be penalized on production to a greater extent than originally planned. The Dallas meeting voted to classify all leases of less than 20-acres as a 20-acre unit, as published in detail last week. The committee's recommendations to the governor called for tracts of one acre and less to have 61 barrels daily allowance, assuming that the quota for the field would be four barrels per acre, with one barrel added for each additional acre up to 20 acres. It was pointed out at the Dallas session that more than 400 leases have been, or will be drilled, that are less than 20-acres in area. Drilling in the field has registered a decline during the past week in anticipation of the current proration plan of placing a production premium on drilling being withdrawn.

Decline in Drilling Activity Falls Short of Expectations

Tyler, Texas.—Decline in volume of drilling activity in the East Texas field recorded during the past week after having attained an all-time record of 886 operations the week previous fell short of expectations. The latest survey of activity shows 865 operations, or 21 less than the peak level. The loss was expected to be greater because of the completions of 175 wells and dropping of a number of locations and rigs during the seven-day period, but locations registered a total of 129, as compared to 124 the week previous, and 195 three weeks ago. The dropping of locations in greater numbers was due to operators anticipating a change in the proration plan by Governor Sterling to an acreage basis, and such locations would be of no advantage to owners.

An analysis of the tabulation of most active operators published in these columns each week reveals a shift from a comparably few companies accounting for half of the field activity to more activity among operators having only one to four rigs running on their leases. During the past week the 24 most active operators dropped far below the miscellaneous companies in total activity largely because the leaders made drastic reductions in their development work.

Humble Oil & Refining Company regained its lead as

Operations East Texas Field

Most active companies operating in Gregg, Rusk, Upshur and Smith Counties, comprising the East Texas oil field, are listed below, with total operations held by each, exclusive of completions, as of October 30, 1931:

Company—	Location	Derricks & Rigs	Active Tests	Total under way
Humble Oil & Refining Company	3	29	17	49
Sinclair Oil & Gas Company	1	8	27	36
Magnolia Petroleum Company	10	10	16	36
Arkansas Fuel Oil Company	5	7	13	25
Tidal Oil Company	6	7	9	22
Gulf Production Company et al	7	6	9	22
Shell Petroleum Corporation	2	3	11	16
Sun Oil Company	1	4	11	16
Yount-Lee Oil Company	7	7	6	20
Mid-Kansas Oil & Gas Company	6	5	6	17
Atlantic Oil Prod. Company et al	2	5	7	14
Stanolind Oil & Gas Company	5	2	9	16
Stanolind-Simms Oil Company	2	2	3	7
The Texas Company	3	8	8	19
Golding-Murchison Oil Company	0	6	5	11
H. L. Hunt et al	1	4	3	8
Prairie Oil & Gas Company	1	2	5	8
Empire Gas & Fuel Company	.	.	7	7
Cranfill-Reynolds Company et al	2	1	4	7
Roeser-Pendleton, Inc.	.	2	3	5
Sabinas Oil Corporation	3	.	3	6
Amerada Petroleum Corporation	2	2	5	9
Barnsdall Oil Company et al	.	4	.	4
California Pet. Corp. of Ven.	2	5	4	11
Superior Oil Company	.	2	2	4
Total for 24 companies	71	131	193	395
Miscellaneous companies	96	150	224	470
Total	167	281	417	865
Total previous week	131	294	461	886
Operations by Areas				
Longview	65	134	177	376
Joiner	47	80	131	258
Kilgore	55	67	109	231
Total	167	281	417	865

the most active operator from Sinclair Oil & Gas Company after surrendering same to the latter the previous week by a narrow margin. California Petroleum Coporation and Standard Oil Company of California, made seven new locations during the past week.

Twelve locations added during the past week by Magnolia Petroleum Company caused its operations in the field to advance to near the high mark previously attained by the company. Towards the close of last week this company reported drilling in progress on 16 tests, with derricks or rigs on 10, and 10 locations, making a total of 36 operations. Magnolia Petroleum Company has completed 154 producers. Tidal Oil Company reports 77 completions; nine drilling; seven derricks and rigs; and six locations. The latter is confronted with considerable drilling in taking care of offsets to its Lake Davernia property in Gregg County, having cleared title to this large leasehold during the past week after several months delay in the courts.

Sun Oil Company decreased its field operations from 22 to 16 over the past week, and has 77 wells on production. Shell Petroleum Corporation registered a decline of seven operations, making a total of 16 on its current field report, including 11 drilling; three rigs; and two locations. Atlantic Oil Producing Company, with Byrd & Frost, Inc., sharing a half interest in some of the leases, is rapidly becoming one of the large well owners, with 34 completions on production late last week, and operations under way on 14 additional tests.

East Texas Failure Presages Elimination of Large Acreage

Longview, Texas. — Completion of a dry hole in the northeast portion of the East Texas field and on a lease considered a sure shot for production furnished the first exception to this field's reputation of having no failures within the productive zone, which is estimated at 93,000 acres by some authorities. The exception was established last week when Columbia Oil & Gas Company's G. A. Castleberry 1 on 14-acre lease in the south center of the D. Sanches Survey, failed to respond with production in commercial quantities after several days of swabbing at depth of 3672 feet. The hole was cased and tubed in anticipation of a producer, and tested separately through both. The rig has been moved off, the hole temporary abandoned, but not plugged. Only about six inches of sand carrying traces of oil was logged at the expected producing horizon, according to W. L. Todd, president of the company. Thin bodies of sand have been logged by other completions along the east portion of this section of the field, but all managed to make good producers.

Arkansas Fuel Oil Company's G. A. Castleberry 2, located a short distance to the east of the above failure, developed only a small show of gas after coring broken formation at 3600-50 feet, but has cemented pipe to make a try for a producer. This company has held back operations on three other nearby tests to await the outcome of the doubtful one. There are possibilities that 1000 acres or more of territory heretofore considered proven for production will be eliminated by these developments. Champlin & Bass, Inc.'s Mrs. G. T. Mattox 1, located about one mile northeast of the above tests, registered a flow of 65 barrels per hour through open tubing from broken sand at 3617-20 feet, followed by shale to 3640 feet, although it was considered in doubtful territory.

Johnson et al's J. Hargraves 1, located in the southwest part of the M. Mann Survey, Upshur County, and on the extreme north end of the field, developed a small producer from sand at 3709-12 feet, flowing through casing. Eastland Oil Company's O. M. Victory (25-acre lease) 1, located in the southwest corner of the E. A. J. Evans Survey, promises to add more productive territory to the northwest edge of the field in Upshur County, with some oil saturation in broken sand at 3637-3642 feet. Casing has been cemented at 3548 feet.

In the Kilgore townsite area, Martin et al's Trip Elder 1 drilled into Georgetown at 3555-66 feet, and failed to show oil or gas when given a swabbing test in the upper horizon. Frank Hines and associates are reported to have acquired Kinsey & Trimble's Griff Davis four-acre lease, W. P. Chism Survey, along with a 3630-foot crooked hole for $8500, and the new owners will make an effort to re-condition the hole to make a completion.

Another midget producer for the Kilgore townsite area was completed last week when Gold Star Oil Company's J. A. Butts 1 flowed 150 barrels per hour through three-quarter-inch choke on 1¼-inch tubing. This well was cased with three-inch pipe, and will be allowed to produce as much daily under proration as other standard equipped wells that cost about three times as much.

Efforts of Cranfill-Reynolds Company-Leon Russ et al to extend production, or establish a new oil area about five miles north of the East Texas field in Upshur County in drilling M. Rash 1 in the E. N. Eubanks Survey was holding the spotlight of interest early this week. This wildcat encountered first hard Pecan chalk at 2422 feet, with a surface elevation of 329 feet, and is credited with being about 75 feet higher on this marker than Tips DeArmand's dry hole to the southwest. Companies are somewhat in the air about the outcome of this important wildcat, with some assuming a hands-off policy in regard to lease-buying to await proof that the Woodbine sand will produce in the area, then pay the price for protection.

Brock-Lee Company Will Not Press East Texas Injunction

Dallas, Texas.—No attempt will be made by Brock-Lee Oil Company to continue its federal court attack on proration enforcement in East Texas, even though the former's injunction case has been re-set for trial before a three-judge court at Tyler, January 4.

The company obtained a temporary injunction October 13, and a hearing was to have been held at Beaumont, October 29, but attorneys for both parties agreed to continue the case indefinitely, as published last week.

Owners of Brock-Lee Oil Company have announced that another continuance of the case will be asked in January unless unforeseen developments in regard to proration enforcement by the military authorities acting under directions of the governor occur in the meantime.

Considerable agitation has taken place among independent operators in East Texas during the past week as a result of a movement having been launched by the Texas Oil & Gas Conservation Association to have the method of determining production allowances for each lease changed from a well basis to a straight acreage plan. Owners of small tracts and leases that have been closely drilled are registering the protests because of being confronted with a substantial cut in production allowances. It is generally believed that if some change in the proration plan had been made to affect drilling curtailment in advance of the uniform price advance of 15 cents per barrel adopted by all major purchasers November 2 that operators penalized by the acreage plan would have been contented with the price raise. Now that the price boost has taken place the latter group want to retain the old plan of proration more so than ever.

South Texas Field Developments

EARL POST, ***Staff Representative, San Antonio, Texas***

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Further Extension of New Sand In Cole Pool Is Anticipated

San Antonio, Texas.—Further extension of the new sand in the Cole pool, Duval County, is expected to result from Cole Petroleum Company's Benavides 71, which showed 200 feet of pure oil on a drill stem test in 10 minutes in a sand at 1747-57 feet. The well is southeast of the Benavides 70, discovery well, which found the sand at 1730-36 feet, making 100 barrels initial. Benavides 71 has set casing and is waiting on cement.

The location of Benavides 71 is 365 feet from the southeast line and 442 feet from the northeast line of block 8, Survey 19, Cole sub-division, Mariano Arispe Grant.

The Schoolfield and O'Byrne pool also continues active. Duval Oil Corporation has located its Bishop Duval Cattle Company 6, 1980 feet from the west line and 990 feet north of the center of Survey 135. This is 660 feet north and 330 feet east of No. 4 and derrick is up. Humble Oil & Refining Company's White 2, Survey 58, is drilling at 1700 feet. Magnolia Petroleum Company will spud in its J. O. Wilson 6, Survey 136, in the near future. The Texas Company's Bishop Duval Land Company 3, Survey 135, is preparing to complete after getting the sand at 2312-16 feet. The 6⅝-inch casing is set at 2310 feet.

A new producer, the third in the pool, is expected in Vacuum Oil Company and SR & C Oil Corporation's Duval County Ranch Company 5, SRC pool. This well made a small amount of production at 1723-28 feet and was deepened to 1734 feet, where it again is being completed. The well is 400 feet northwest of the No. 3 producer in Section 293. So far, there are two producers and two dry holes, the entire pool being controlled by these two operators.

Damac Pool Tests Hold Interest in Bee County

San Antonio, Texas.—The Damac pool, southwest of Pettus, Bee County, has several wells that are holding considerable interest. The most important is H. H. Weinert & C. R. & M. Company's George A. Ray 1, located 150 feet from the west line and 265 feet from the north line of the Weinert 14-acre tract in the John A. Williamson Survey. This well is just west of the Damac lease, on which the discovery well is located, and is between it and the Buchanan and Lefevre extension well. At last reports it was only 600 feet, but was drilling rapidly and would be on the sand within 10 days.

Buchanan and Lefevre are preparing to re-complete their George A. Ray 1, 2800 feet east of the discovery well, after plugging back 10 feet to a new depth of 3898 feet. This well showed for an initial production of about 1500 barrels from a sand topped at 3887 feet, but showed some salt water, believed to be coming from the bottom.

On a 100-acre lease, offsetting the Buchanan and Lefevre lease to the west, C. R. & M. has made a location for a George A. Ray 1, which will be drilled after the Weinert joint test is completed. This well will hold considerable interest inasmuch as it may further extend the producing territory to the west.

The only other operation in the Damac pool is Houston Oil Company's J. F. Portis 1, which is located 150 feet from the north line and 330 feet from the west line of the A. Smalley Survey and is a southwest offset to the Damac producer; this well should spud within a day or so.

In the discovery pool at Pettus, United Production Company has reached 6809 feet in its Ray 39 and is making rapid progress. It is rumored that this test is to be drilled to below 9000 feet. It is 1130 feet from the southeast line and 2396 feet from the southwest line of the T. Hanson Survey and is north and east of the proven area. It had slight shows in the Pettus sand, but was carried deeper.

In wildcat territory, two wells are drilling. Humble Oil & Refining Company's Laura Thompson 1, Garrett Roche Survey, is drilling at 2906 feet. J. C. Hughes et al have spudded in their P. H. Martin 1, located about 900 feet south of Simms Oil Company's gasser. It is in the John Tyford Survey.

Large Gas Well Reported In Hidalgo County, Texas

San Antonio, Texas.—Closely following the gas discovery in the Mier district of Northern Mexico, comes an important report from a test in Hidalgo County, just 30 miles to the east in the United States. It is Dayle L. Smith Oil Company's Fernandez 5, on Porcion 76, three miles north of Sam Fordyce and near the Starr County line and the Mexican border.

The well was reported to have blown in while drillers were attempting to clean the test, flowing a great deal of gas and salt water, the gas volume estimated as high as 30,000,000 cubic feet daily. The well has since been shut in and equipment installed in an effort to cut off the salt water believed to be coming from slightly above the gas sand. The gas sand is logged at 4010-26 feet, while the salt water is said to be coming from 3992 feet. Two reports are given on the level at which the casing is set: one says 3968 feet, while the other is 3982 feet; in either instance, the casing is above the supposed water level.

This well is the thirteenth drilled in this area, consisting of 11,000 acres under lease by the Smith organization. The company drilled eight tests on the Daskman lease and five on the Fernandez. The Fernandez 5 is 300 yards east of the Daskman 3. So far, there has been no commercial production developed on the block, where operations have continued off and on for the past 12 years.

The Fernandez 5 blew in as a gasser in January, 1930, running wild for four or five days, the sand blast cutting away the fittings. It was mudded in and the latter part of June of this year it was cleaned out and casing set. The test is scheduled to be completed within the next few days.

Ohio-Mexico Oil Corporation's La Presa 1, on the Mier structure, eight miles south of Roma, Texas, and in the State of Tamaulipas, Mexico, about 30 miles west of the Fernandez well, recently was completed as the first producer in Northern Mexico. The well has 12½-inch casing

set at 1268 feet. The top of the sand is recorded about 1300 feet. The well was drilled to 1750 feet, but plugged back to its present total depth of 1485 feet. It is estimated at 7,000,000 cubic feet of gas daily on open flow with 600 pounds pressure.

While there undoubtedly is no connection between the two wells, their production tends to boost speculation as to possible production along the border in the lower Rio Grande Valley. At present there are two fields in Starr County—The Texas Company's deep production on the Roma structure and the Los Olmos shallow oil and gas area.

Humble Makes Location For Second Camp District Test

San Antonio, Texas.—Humble Oil & Refining Company will try its luck again at finding crevices in the Camp district, south of Darst Creek, Guadalupe County. It has made a location and is moving on its Dan Denman 2-C, located 900 feet north and 450 feet east of the southwest corner of the tract in the William Arrington Survey. The test is 450 feet north and 300 feet east of the Denman 1-C, which has been gauged at 5460 barrels officially.

The Denman 1-C topped the crevice at 2358 feet and was brought in for an initial production of 3195 barrels, showing 300 pounds pressure on a one-eighth inch choke. The well was allowed to flow for a day and a second gauge showed the increased flow.

John F. Camp's Denman 1, 1600 feet farther south, is preparing to set liner and swab in effort to increase production. The well topped the crevice at 2400 feet and made an initial official gauge of 1380 barrels. The well has not been performing regularly, however, and will be gauged again when it is finally completed. It was placed on a three-eighths-inch choke after it had headed several hours, and showed 175 pounds pressure, flowing 80 barrels the first hour. Production declined and so far, it has not been satisfactory. The oil from this well is 38.7 gravity at 104 degrees and about 34.5 corrected.

The proration schedule for the new period starting November 1 includes the above wells, giving the Darst Creek a total of 260 with a potential production of 127,943 barrels. The allowable remains at 18,000 barrels. The report is as follows:

Guadalupe County

Company—	No. Wells	Total Potential	Daily Allowable
Abercrombie & Harrison	5	2,920	393
John F. Camp	2	7,148	962
Cranfill & Reynolds	1	85	85
Empire Gas & Fuel Company	8	1,606	298
Gulf Production Company	51	25,443	3,493
Humble Oil & Refining Company	51	28,174	3,792
United North & South Development Company	17	8,355	1,209
Magnolia Petroleum Company	48	10,983	1,614
Penn Oil Company	1	55	55
Stroube & Stroube	1	90	90
Sun Oil Company	15	12,673	1,704
Texas-Humble et al	1	602	81
The Texas Company	52	29,002	3,902
L. C. Turman	2	5	5
Trinity Drillers	3	622	127
H. H. Weinert et al	1	95	95
H. H. Weinert	1	35	35
H. H. Weinert	1	50	50
Field totals	260	127,943	18,000

Bexar County Is Scene of Extensive Drilling Work

San Antonio, Texas.—A rather extensive drilling campaign is apparent in Bexar County, south of San Antonio, as nearly one-half dozen new operations are reported.

Alamo Natural Gas Company (Whipple et al) is starting a test on the 431-acre Gembler tract in the A. Menchaca Survey No. 51, to test out the gas structure found in the northwest corner of the Dobrowolski pool by Penn-Tex Oil Company. The well is 150 feet from the east line and 1000 feet from the south line of the tract and is northwest of the several gassers, which find their production around 700 feet.

Another interesting test is J. E. Anderson's Suburban Irrigated Farms 1, which showed gas in a sandy lime from 1137-1200 feet in the Anacacho series topped at 1117 feet. Casing was set at 1117 feet and the well tested to its present total depth of 1200 feet, making an estimated 100,000 cubic feet. The formation was very tight and would not let the gas flow sufficiently and the well is being deepened a few feet and will be tested again. It is on the Chicon lake fault about 20 miles southwest of San Antonio. It is in the C. Logan Survey.

S. W. Blount has spudded in his San Antonio Land and Development Company 1, one mile east of the Medina River near the Palo Alto road, 12 miles south of San Antonio, and is now drilling below 300 feet. John T. Callahan also has spudded his J. H. Much 1, which is located on the J. M. McCamley Survey. Crawford and Terrell's L. F. Ridder 1, J. A. Baerera Survey No. 58, is another new operation.

Interest in Saxet Field Is Centered on Deep Test

San Antonio, Texas.—The only interesting happening at this time in the Saxet field of Nueces County is L. L. Smith's Alexander 1, a deep test, which is now coring at 5264 feet. This well is one of the few to be drilled below 5000 feet in an effort to test out the lower formations of the field.

Neal-Milton and Kepley Production Company's Roark 1 has set a whipstock at 4832 feet and is preparing to drill out. This well showed 55 fourbles of oil on a drill stem test in 14 minutes, but developed salt water when drilled in. There has been considerable discussion as to the source of the water, and attempts have been made to shut it off.

Saxet Oil Company is rigging up on its Weil 1, while Gulf Coast Oil Company is drilling at 4615 feet in its Sagarin 1.

Gulf Coast Oil Company is attempting to prove up a new sand or a 2½ mile west extension to the Roark sand in its Elder 1. A sand was encountered in this well at 4892-96 feet and no drill stem test was available; casing was set. The last report is that it is nippling up preparatory to completion.

South Texas Has 130 Tests Drilling as of November 1

San Antonio, Texas.—Report of drilling operations in South Texas at the opening of November, 1931, showed a total of 130 tests. This includes 76 wildcat wells actually drilling or shut down temporarily. Ten more wildcats were in the process of rigging up and five were locations. In the proven fields, there were 24 active tests, six rigging up and nine locations.

Gulf Coast Field Developments

JACK LOGAN, ***Staff Representative, Houston, Texas***

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Gulf Coast Records General Increase in Drilling Work

Houston.—Those who have spent any time during the last two weeks driving from field to field in the Gulf Coast districts of Texas and Louisiana have noticed a perceptible increase in drilling activity, both in proven fields and in territories yet considered wildcat.

The increase in activity can not be attributed to the upward revision of posted prices for Gulf Coast crude as the new posting has been subsequent to the increase, but the tendency toward increased activity certainly will not be retarded by such action on the part of purchasers of oil in South Texas and Louisiana.

A cursory glance over current drilling operations for the two-week period reveals a rather broadspread policy of attempting to increase production in old, established fields by working over old wells and resuming drilling on those which have been standing idle for several months at depths in many cases only half way to the producing horizon. Quite a few wildcats which have been standing idle for the summer have resumed drilling, and locations for dome prospect wells have been announced.

Localization of the increased activity in the Gulf Coast would be difficult, inasmuch as it is rather general from Matagorda County on the southwest to the Mississippi on the east.

East Hackberry's Production Boosted to 8550 Barrels Daily

Houston.—Production in the old, settled field of East Hackberry, South Louisiana, was boosted to 8550 barrels per day this week by completion of two wells in Section 13-12s-10w. Last week the field's daily average output was 4200 barrels, according to American Petroleum Institute estimates.

Jim Oil Company, the organization of "Lucky" Jim Sutton, completed Erwin 2 for an initial production of 3000 barrels of pipe line oil. Erwin 2 registered a working pressure of 200 pounds, a total depth of 2970 feet.

Calcasieu Oil Company's Watkins 27, on which the derrick had blown down after the well remained idle for a period of time, produced 1000 barrels of initial oil from 2985 feet. The oil was 25 gravity. This operator is rigging up on Watkins 28, in the same section.

South Louisiana Wells Shut In Pending Storage Facilities

Houston.—Both producing wildcat wells of Vacuum Oil Company in Coastal Louisiana have been shut in pending provision of storage and pipe line facilities by Magnolia Pipe Line Company. These wells, one located in Cameron Parish and one in Calcasieu Parish, had an aggregate initial yield of 4360 barrels.

Magnolia Pipe Line Company is laying 7½ miles of 5 3/16-inch line from Vacuum Oil Company's Wait 1 in the Iowa district of Calcasieu Parish to a barge dock on the Calcasieu River, where two 10,000-barrel tanks will be erected. Until this line is completed, such production as is obtained from the well will be taken care of by storage on the lease, located in Section 12-9s-7w.

Magnolia Pipe Line Company is also shipping two 80,000-barrel tanks from its West Texas tank farm at Midland to the lease of Cameron Meadows 2, Section 21-14s-13w, Cameron Parish. The tanks will be erected on a bluff between the well and the Gulf of Mexico.

Another Ft. Bend County Wildcat Well Productive

Houston.—Cullen and West and Gulf Production Company, joint developers of the Thompson dome prospect, Clear Lake, Fort Bend County, successfully completed this week another of their wildcat projects there for an initial production estimated at 1200 barrels.

George 2, the well which was completed, came in barefooted flowing through two half inch chokes. The gravity of oil coming from the 5200-foot sand is 24.8; pressure is 800 pounds. George 2 is located 600 feet east of George 1, which was completed in August for a similar initial production, but at a depth of only 3920 feet. It is the fifth producer brought in on Thompson dome by Cullen and West and Gulf Production Company.

The first well completed in what has recently been termed "Clear Lake" field was Lockwood 1, which was made to produce from a sand bottomed at 3089 feet. The other two completions were Lockwood Sharp 1-A, 3576 feet, and Lockwood-Sharp 2-A, 3170 feet.

George 2 is the deepest of the producers yet completed on Thompson dome, but 2-A is being deepened and at last reports was drilling around 5050 feet after having cored oil sands between this depth and 5125 feet.

Barbers Hill Production Records Steady Decline

Houston.—Production at Barbers Hill field, Chambers County, has shown a consistent, though not serious, decline for the last month to its present figure of 21,000 barrels per day, despite rather uniform addition of flush oil in excess of the drop each week.

There was only one completion at the field during the week ending October 31: Nat Hunter Producing Company's E. H. Winfree 6, formerly an operation of Humphreys Corporation. This well was not representative of the calibre of recent completions at the field as it produced only 109 barrels of net oil on the pump after having been bottomed at 5620 feet.

Notwithstanding the decline in production, Barbers Hill is the most active field in the Texas Gulf Coast today. Nat Hunter Producing Company's Kirby H-8 is reaming to set casing on an oil sand at 4381-95 feet; it is drilling in rock below 1000 feet on Morgan-Fitzgerald 1. Sinclair Oil & Gas Company is drilling below 4369 feet on its J. F. Wilburn 8 at the hill; and is about ready to enter the salt on its Wilburn 9. Sun Oil Company has set casing at 5120 feet on O. K. Winfree 2 and is preparing to pump the well. The Texas Company is drilling well below 3000 feet on two operations.

Louisiana--Arkansas Field Notes

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Zwolle Field Is Extended Half Mile South and East

Shreveport.—The Zwolle chalk rock oil producing field in Sabine Parish was extended a half mile south and slightly east of the southeast border of production during the last week when Crescent Drilling Company completed Byrd 1, NW NW Section 12-7-11, flowing 500 barrels of oil daily from total depth of 2494 feet in Zwolle chalk. The well is flowing through one-inch choke with 120 pounds back pressure. The well blew in without bailing while one fourble of drill stem was still in the hole.

This well was one of four producers officially completed in Zwolle during the last week, along with one dry hole. Lanier and Dyer's Barthold 1, Section 35-8-12, is pumping 10 barrels daily from chalk at total depth of 2531 feet. Coates Petroleum Company's Sabine B-1, Section 1-7-12, completed recently flowing 500 barrels daily which went dead two days later from salt water, has been standardized and is pumping 500 barrels of fluid daily half oil and half salt water. Total depth is 2306 feet.

The same company's Hale 2, Section 1-7-13, which flowed at the rate of 200 barrels daily when first completed was officially gauged as a 50-barrel daily flowing well at 2392 feet. It is now flowing by heads instead of steadily as at first.

H. W. Perritt abandoned Bowman-Hicks 5, Section 2-7-12, as a dry hole at total depth of 2437 feet in chalk. He made location during the week for Bowman-Hicks 6, SE NE Section 2-7-12. This was Zwolle's only new location for the week except a new location northeast of east field production by Exchange Petroleum Company which made location for Louisiana Long Leaf 1, NE NW Section 35-8-11.

Don Brooks, Trustee, last week abandoned Douglas 1, NE SW Section 9-22-2w, a wildcat in Union Parish. The test was a dry hole at 3509 feet in gumbo. Chalk was topped at 2317 feet and red beds at 3079 feet. Elevation was 175.1 feet.

One new location in the proven gas field of Union Parish was made last week, Nemours Corporation's Harrell C-1, Section 7-20-4e, which is already drilling at 1525 feet.

Producer Between Pleasant Hill And Zwolle Opens New Structure

Shreveport.—Langbridge Oil Corporation's Stephens 1, SE NE Section 17-9-11, Sabine Parish, Louisiana, almost midway between the Zwolle and Pleasant Hill oil fields, was successfully completed as a commercial oil well during the last week. It gauged 40 barrels of 39.1 gravity oil in 24 hours, flowing through two-inch tubing set with packer; total depth is 3626 feet but the production is believed to be coming from two sand strata at 3360 and 3380 feet; 6⅝-inch casing was cemented at 3176 feet. Elevation is 303 feet.

The well proves the existence of an entirely separate structure from those at Zwolle and Pleasant Hill, being about seven miles north of the former and five miles south of the latter. It is on a 4200-acre block. Stockholders in Langbridge Oil Corporation are J. M. Bridges, Pleasant Hill, Louisiana; H. B. Langford, Shreveport; Frankie Foster, Kilgore, Texas; and Pugh and Hickman, Shreveport.

Negotiations are under way with Standard Oil Company of Louisiana which takes all production at Zwolle, to lay a gathering line to the new well. No more tests are planned on the block immediately, according to one of the stockholders.

Whether the production from the new well is coming from the Woodbine series or from the lower Cretaceous is at issue among geologists.

Smackover Deep Test Now Down to 6071-Foot Level

Shreveport.—Drilling stem which was hung in Lion Oil Refining Company and associates' Guy P. Hayes A-9, NE NE Section 4-16-15, Smackover's first 6000-foot test in Union County, Arkansas, was successfully recovered Sunday, November 1, by means of lubrication. Total depth of the hole at present is 6071 feet in rock salt.

The test started for 5000 feet and later with 6000 feet as the goal had continued to make hole below the latter depth after pure rock salt was encountered at 5974 to 5980 feet which formation alternated to present depth with layers of broken rock salt and lime. Elevation is 96 feet.

Zepp Oil & Gas Company is arranging to deepen W. E. Hillman 2, SE NE Section 20-10-13, a wildcat in Dallas County, Arkansas, after this test bailed dry at total depth of 2655 feet; six-inch casing had been cemented at 2620 feet.

W. R. Smith's Lytle 1, SE NW Section 31-18-3, Chicot County, Arkansas, a wildcat, was abandoned as a junked hole last week at 2925 feet.

Loreco's Process Team Wins First Prize in Safety Contest

Shreveport.—The first aid team representing the process plant of Louisiana Oil Refining Corporation's Bossier City, Louisiana, refinery won first place in the third annual first aid demonstration contest held at the Louisiana State Fair here October 29. Eleven teams representing places in Arkansas, Louisiana and Texas competed.

Second place was won by Ohio Oil Company's first aid team from Haynesville, Louisiana, and third place went to Gulf Refining Company's team from Grand Bayou, Louisiana. First novice prize went to United Gas Public Service Company's team composed of girls, of Shreveport. Second novice prize went to Gulf Refining Company's team of Homer, Louisiana, and third novice prize went to United Gas Public Service Company's team of La Place, Louisiana.

The highest score made was 99.7 per cent and the lowest in the contest was 96.45. An American Legion post of Shreveport sponsored the contest.

El Dorado, Ark.—Atlas Pipe Line Company has contracted to deliver 50,000 barrels of heavy Smackover crude to McMillan Petroleum Corporation's El Dorado refinery. The oil will be taken from Phillips Petroleum Company and Southern Crude Oil Purchasing Company's leases which have a combined daily production of approximately 400 barrels.

Further Test of Clarke County, Mississippi, Wildcat Is Planned

Meridian, Miss.—Gulf Refining Company's Long Bell Lumber Company A-1, SW SW Section 10-2n-16e, Clarke County, East Central Mississippi, in which eight feet of sand with a saturation of heavy oil was encountered near the top of the Eutaw from 3692 to 3700 feet, and which was bailed late last week with a show of heavy oil and salt water, was standing Monday, November 2, with approximately 75 feet of oil and 130 feet of salt water in the hole, which had about 100 feet of sand at bottom. It is planned to set liner with screen for a further test; elevation is 380.3 feet.

This test is on a block of approximately 25,000 acres taken by Gulf Refining Company less than a year ago after 23 diamond drill core tests had been made on various parts of the block.

Clarke County, Mississippi, Test Arouses Wide Interest

Meridian, Miss.—With a considerable number of oil operators and scouts here scouting Gulf Refining Company's Long Bell Lumber Company A-1, SW SW Section 10-2n-16e, Clarke County, Quitman district, which recently showed eight feet of sand with a saturation of heavy oil at top of the Eutaw, from 3692 to 3700 feet, there has been some trading in leases and royalties in the general area of the test, which is located on a 25,000-acre block. The play seems to be east and southeast, in the direction of the Hatchitigbee anticline which runs northwest-southeast into the edge of Mississippi, starting a few miles southeast of the test, and extending into West Alabama.

Frank Buttram of Oklahoma City has blocked 1000 acres centering in Section 12-1n-16e, about as close as anything available. The amount paid is not known but it is reported a bonus of $2.50 per acre was paid for the nearest part of the block. some close-in acreage has brought $7.50 per acre. However, five miles south of the test, 200 acres recently changed hands for fifty cents per acre.

Among oil men who have been in this territory since the core was taken and seven-inch O.D. casing cemented at 3685 feet, are the following: J. A. Burke, Corsicana, Texas; W. C. McGlothlin, Corsicana, former geologist for Gulf Production Company; Frank Condon, Longview, Texas; R. R. Cocke, Corsicana; James H. Gardner, Tulsa; Frank Buttram, Oklahoma City; H. H. Lawson, Tyler, Texas; L. L. Horne, Dallas; G. C. Tisdale, Dallas; Willis Storm, Dallas; Leon R. Russ, New York City; John Deeting, Dallas; C. C. King, Tulsa; E. R. Newby, Oklahoma City; E. V. Whitwell, Tulsa, geologist for Carter Oil Company, which has drilled wildcats in North Mississippi; Donald J. Munor, Dallas, a geologist for Sun Company; Brooks Van Horn, independent geologist; Charles Goodson, Shreveport; T. G. Hibler, Shreveport, who has wildcatted in Southeastern Mississippi in past years; R. J. St. Germain, Tulsa; C. C. Carlson, Tulsa; A. C. Scott, Shreveport; W. L. George, Shreveport; W. M. Johnson, Shell Petroleum Corporation, Baton Rouge, Louisiana; Oscar Renaud, Texas Company; A. C. Scott, Shreveport; E. C. Nicar, magnetometer operator, Houston, Texas; and S. A. Hobson, Greensboro, Alabama, who has drilled spasmodically for several years in Washington County, Alabama, on the Hatchitigbee anticline.

Veteran land buyers of Clarke County have sounded a warning to lessors in East Central Mississippi, to go back 30 or 40 years in checking titles, especially on land formerly owned by lumber companies and later sold to individual farmers. One company once having large holdings in Clarke and adjoining counties is said to have retained mineral rights in land sold 20 years ago and earlier, no one buying the small tracts at the time attaching much importance to this reservation.

One Small Gas Well Completed On West Edge of Jackson Field

Jackson, Miss.—Two gassers, one of small capacity and one failure, the latter on the west edge of the field, were recorded in the Jackson gas field during the last week. There were also two new locations in the field.

James Alexander, Trustee's, Wright 1, NW NE Section 13-5-1e, Rankin County, in the southeast edge of the Jackson field, was completed last week at total depth of 2423 feet making an estimated 40,000,000 cubic feet of gas. Chalk was topped at 2412 feet after black shale was encountered at 2320 feet. Elevation is approximately 269 feet. Six and five-eighths-inch casing was cemented at 2390 feet.

Willis and Culley's Applewhite and Holden 1, SW SW Section 12-5-1e, Rankin County, in the southeast part of the field, was a 4,000,000-foot gasser at 2381 feet, after chalk was topped at 2377 feet with elevation of 268 feet. Gulf Refining Company's Rainey A-1, Section 13-5-1e, 770 feet south and 20 feet east of this test, topped the chalk at 2500 feet, which with the same elevation shows a drop of 123 feet in the structure in that short distance.

Hilgard Gas Company's Mississippi Company 1, NE SW NE Section 4-5-1e, Hinds County, an outside test on the west of the field, was abandoned as a salt water hole at 2551 feet after topping the chalk at 2525 feet. The upper part of the black shale above the chalk was sandy and broken at the top, it being encountered at 2379 feet. This test with elevation of 296.4 feet, checked 46 feet low compared to a commercial gasser 1300 feet east of it.

Howie and Howie erected derrick for Fee 1, SW SW Section 34-6n-1e, Hinds County, on the north edge of the field. In Rankin County McGuire and associates are moving in rig for Motor 1, NW SE Section 12-5-1e.

Rig Up Test Southwest Of Welder Gas District

San Antonio, Texas.—Atlantic Oil Producing Company is rigging up its Welder 1-C, on block C of the E. R. Portillo Survey, 2½ miles southwest of the Welder gas field in San Patricio County.

In the main field, Welder Oil Corporation is waiting on cement after plugging back several feet in its Welder 3, 900 feet northwest of its Welder 2, gasser. The well showed 1200 pounds pressure and one fourble of salt water on a drill stem test from 3659-63 feet. It, however, showed 1100 pounds pressure on a 12-minute drill stem test of the sand from 3647-59 feet.

Los Angeles.—Baldwin Hills Syndicate is starting a well on the Sentous property, near the Inglewood field, and will test the deep formations which should be found at this point. The location is such that commercial production would cause considerable drilling in the Inglewood field. The lease has deep zone possibilities, but probably will not produce in the shallow zones. Pan American Petroleum Company drilled a few wells on the Sentous lease some time ago, but did not get commercial production in the shallow producing zones.

INTERNATIONAL PETROLEUM
IN REVIEW

ROY E. LEIGH, *Foreign Editor, New York*

Iraq Pipe Line Progressing

New York City.—The situation in Iraq is of current interest in the oil world, particularly with reference to a rumor which has gained currency in regard to a reported suspension of activity in connection with preparations for the construction of the trans-desert pipe line from Kirkuk to the Mediterranean Sea—a rumor which probably is an outgrowth of a curtailment of drilling and of delay in the placing of orders for the pipe and other material which will be required for the commencement of this great project.

There has been a reduction in drilling activity; but, no decision has been taken which would operate to retard completion of the $50,000,000 pipe line beyond the contract date, December 31, 1935. The various parties at interest in the Iraq consortium are said to have agreed among themselves that the line shall be completed by that date; and, barring unforseen eventualities and fluctuations of the commodity markets, there is nothing now on the horizon which might be expected to delay the completion of the line beyond the 1935 date.

While there has been no official announcement in that connection, the casual observer may speculate that some of the delay in the purchase of materials may have been caused by the recent abandonment of the gold standard in Great Britain. The home office of Iraq Petroleum Company, Ltd., is in London; and approximately half its stock is held by British interests. Off-hand, the decline of sterling would seem to give to British manufacturers of tubular goods and other equipment a certain advantage in bidding; but, considering that French and American interests own about half of the stock of the Iraq company—and considering also the magnitude of the project with respect to the manufacturing capacities of the various European and American bidders for the sale of equipment—it seems probable that the business will be divided and distributed among British, French, American, and other manufacturers, with reasonable regard to economical construction.

While it is possible that the French branch of the pipe line terminating at Tripoli may be completed some what in advance of the fork which will have its outlet at Haifa, in Palestine, it is not expected that one terminal will be advanced unduly, or at the expense of the other. Economy of construction would seem to dictate that work on both branches should be carried forward simultaneously; and, within certain limits, that is what is expected to be done.

Drilling at Baba Gurgur

At the present time drilling is concentrated entirely on the Baba Gurgur structure, near Kirkuk; and two rigs are employed in exploring for the limits of this reservoir. It is a matter of common knowledge that individual wells on this structure have flowed at the rate of around 100,000 barrels per day, during short test periods. No oil has been marketed from this new source, although the company operates a small topping plant near Kirkuk for the production of gasoline and fuel for its own use in transport and drilling operations.

The operating organization of Iraq Petroleum Company, Ltd., has been strengthened during recent months by the recruiting of outstanding talent in the executive, producing, and construction departments.

John Skliros, formerly acting manager at London, has been appointed general manager, probably in recognition of his success in management and in the conduct of delicate negotiations with the governments of Iraq, Palestine, Syria, Lebanon, and Transjordania, whose territories will be traversed by the pipe lines when built.

T. A. Satchell, a veteran of the Tampico and Maracaibo campaigns, recently general superintendent for Lago Petroleum Corporation at Maracaibo, has been placed in general charge of the company's production operations, with headquarters at London.

G. W. Dunkley, a man of outstanding ability in British oil circles, and a man who has had many years of experience in desert operations, has been appointed manager in Iraq. Prior to this appointment, he served as assistant fields manager for Anglo-Persian Oil Company, Ltd., at Masjid-i-Suleiman, in Persia.

H. S. Austin, of Tulsa, formerly vice-president and general manager of Ajax Pipe Line Company, is in general charge of pipe line construction, with headquarters at London.

M. M. Stuckey, formerly manager of Andian National Corporation, at Cartagena, Colombia, will be in charge of pipe line construction in the field. Stuckey rose to prominence among pipe line engineers as a result of his achievements in the construction of the Magdalena line, from El Centro to Cartagena, in the Magdalena Valley of Colombia. He is now in London, but is expected to leave shortly for Iraq.

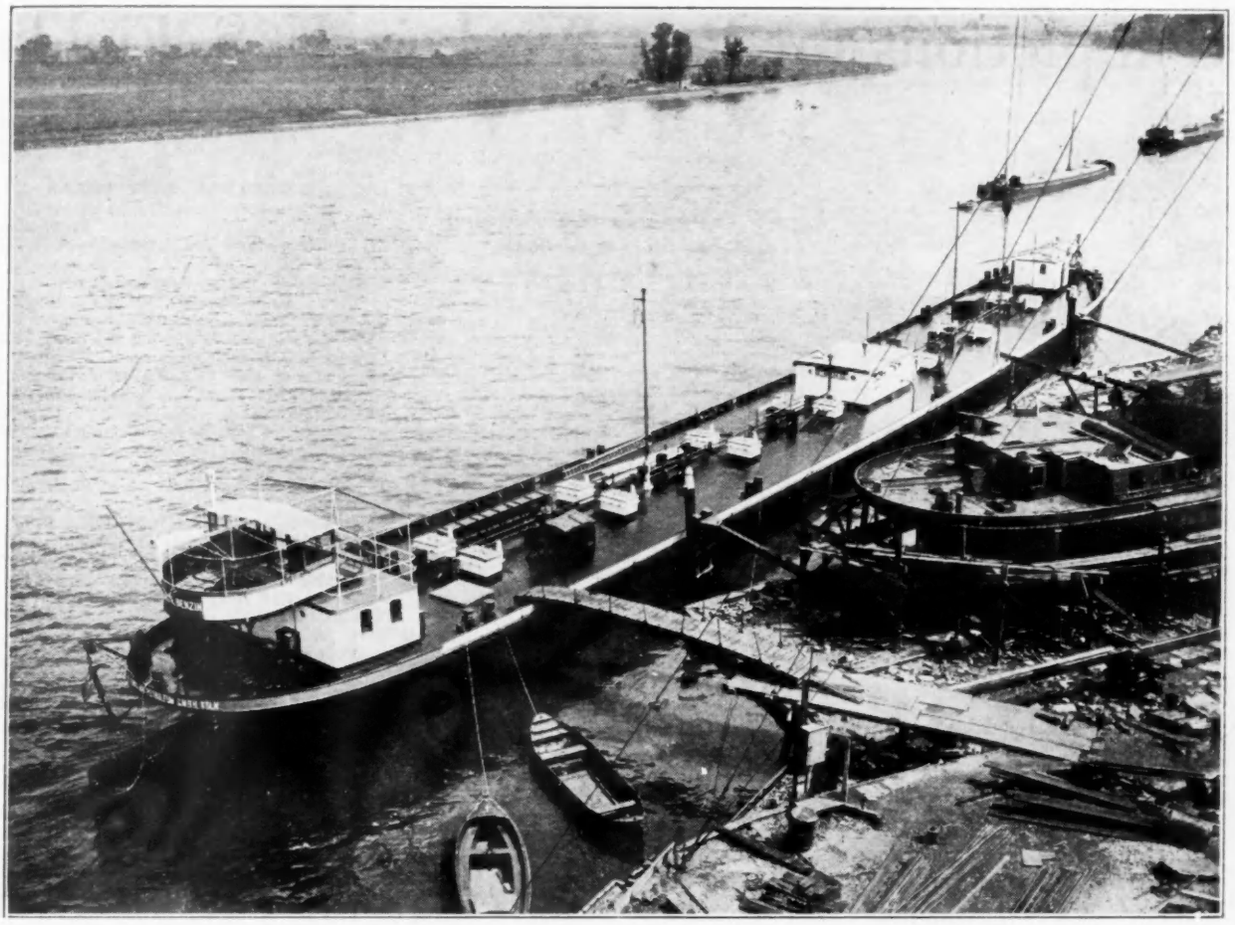
Second Roumanian Cargo Of Gasoline Enroute U. S.

New York.—Dispatches from shipping circles in London indicate that arrangements have been made for the shipment of a second cargo of Roumanian gasoline into the Detroit market. It is reported from that source that the tank ship "Arcola" has been fixed to carry a cargo of gasoline from Constantza, on the Black Sea, to Montreal, head of navigation on the St. Lawrence River, from which point, presumably, her cargo of 7200 tons (2,622,000 gallons) will be transferred by barge to Detroit.

It is reported here that an earlier shipment of gasoline from the same source is now being retailed at eight gallons for one dollar in the city of Detroit.

The freight rate applying to the second cargo above referred to is quoted in shipping circles at $2.15 per ton, which is equivalent to 59 cents per U. S. gallon.

Details are lacking regarding the exact specifications of this particular consignment; but it is known that a premium grade of 64 gravity 375 end point gasoline was being offered publicly at prices equivalent to 3.9 cents to four cents per gallon, with the suspicion, at least, that these public quotations might be shaded a bit in private dealings. An-



Barge of the type used for the distribution of gasoline on the Rhine river. This particular vessel is operated by Sinclair Petroleum, G. m. b. H.

other grade equivalent to U. S. motor gasoline was quoted at 3.45 cents per gallon at about the time this fixture was made. Roumanian "motor spirit, heavy," has recently been quoted at $9.48 per ton, or approximately 2.6 cents per gallon.

Russian products equivalent to the first two grades mentioned above were offered on or about October 22 at 3¾ cents and 3¼ cents per gallon, respectively, f.o.b. Batoum and Taupse. Freight rates from Soviet oil ports on the Black Sea to European points of distribution are exactly the same as those from Constantza, which gives to the Soviets a distinct advantage when undercutting the market.

Tracing the competitive situation a bit further, freight rates from Houston and other Gulf Coast points are approximately one-eighth cent per gallon higher than those from Batoum, Taupse, and Constantza to common European ports of destination—which puts American refiners in third place behind the Russians and Roumanians, in the present market lineup.

Evidence is available, however, to indicate that some American refiners, at least, are holding their own against competition from the Black Sea. It is reported, for example, that gasoline presumably including products from all three sources is being retailed in Holland at prices equivalent to 7½ cents per gallon, this price including 1.1 cent duty and leaving only 6.4 cents for the payment of ocean and inland freight, insurance, handling, and marketing costs and for the purchase of the product f.o.b. refinery.

Retail prices in Belgium are reported as equalling 22 cents per U. S. gallon, including taxes and duty totaling 10.85 cents as well as dealer's commission equalling 2½ cents per gallon. Other costs entering into the transaction include marketing costs estimated at 5½ cents and freight, terminal, and insurance charges plus evaporation losses conservatively estimated as totaling ¾ cent per gallon. Adding all these handling costs and tracing the product back to the Gulf Coast, for sake of example, unless it was sold at a loss—it appears to have had a value of only 2.4 cent per gallon f.o.b. Texas or Louisiana ports.

Cost and selling prices are also out of balance in Germany, where retail pump prices average about 31¼ cents per gallon, including duty and alcohol taxes plus dealer's commission totaling 22.92 cents per gallon. Thus, distributors have only about 8 1/3 cents per gallon left with which to buy the commodity, ship it across the Gulf of Mexico and the Atlantic ocean—or across the Black and Mediterranean seas—and pay handling and marketing costs. On the same basis as calculated above, freight and marketing costs would approximate 6¼ cents per gallon, leaving about two cents for the purchase of the product f.o.b. refinery shipping point.

Applying the same test to the Roumanian figures quoted above, and deducting the pipe line tariff from Ploesti, a central point in the refining district, to the shipping terminal on the Black Sea, which equals 1½ cents per gallon, several grades quoted must yield approximately 2½, 1.95, and 1.1 cents per gallon, respectively, f.o.b. refinery.

Details are lacking regarding the situation in British markets; but it is generally understood that the situation is equally difficut in the United Kingdom, where taxes are higher than on the continent and where the problem of the marketer is complicated by the depreciation and instability of sterling exchange.

Completions for Past Week in U. S. Fields

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CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
BELRIDGE—		
Belridge Oil Co., No. 49-35, 35-27-20	3000	5595
DOMINGUEZ—		
Union Oil Co., Callender 27	600	5008
Hellman 16	750	4780
ELWOOD—		
Barnsdall Oil Co., Luton-Bell 14	2800	4392

EASTERN STATES

NEW YORK

YATES COUNTY—		
Tri-State Production Co., Olszowski 1	¶7	....
Belmont Triangle Gas Co., Miles 1	¶5	....

WEST VIRGINIA

CALHOUN COUNTY—		
E. Smith & Co., Force 1	*	2307
F. F. McIntosh, Hardman 1	¶¼	1903
Bowser Oil Co., Jackson 5	¶¼	1968
Jarvis & Co., Freshour 1	¶1	1919
M. F. Crowley, Hardman 1	3	2660
GILMER COUNTY—		
Chartiers Oil Co., Stump 4	¶1	1478
MINGO COUNTY—		
United Fuel Gas Co., Central Trust 4327	¶¼	2325
WETZEL COUNTY—		
Pittsburg & West Virginia Gas Corp., Himelrick 5401	¶1	3316
WAYNE COUNTY—		
Wayne United Gas Co., Wilson Hrs. 46	¶½	2998

SOUTHEASTERN OHIO

MORGAN COUNTY—		
Ohio Fuel Gas Co., Embree 4	¶¼	1655
WASHINGTON COUNTY—		
Heldman Bros. Heft 3	¶¼	2072
Wickens & Co., McIntyre & Perdew 4	*	1270

CENTRAL OHIO

ATHENS COUNTY—		
Ohio Fuel Gas Co., Cole 2	*	1421
GUERNSEY COUNTY—		
Keith Bros. Virtue 1	10	3415
KNOX COUNTY—		
Hulse-Kundts Inc., Colopy 4	¶½	629
LORAIN COUNTY—		
Ohio Fuel Gas Co., Crocker 2	¶¼	....
MEDINA COUNTY—		
Oko Oil & Gas Co., Fetzer 3	5	470
Edson & Co., Frank 29	45	489
Edson & Co., Packard No. 1, Tr 21	*	....
MEIGS COUNTY—		
Ohio Fuel Gas Co., Douglass 1	¶2½	1230
Utsinger & Co., Plummer 1	¶¼	800
MUSKINGUM COUNTY—		
The Pure Oil Co., Helriggle 1	¶3	4159
The Atha Co., Stark Land Co. 2	*	4174
STARK COUNTY—		
Medford Oil & Gas Co., Froman 1	¶2½	4382
Brendall & Co., Haymaker 2	¶½	4365
Ohio Fuel Gas Co., Bricker 1	*	....
Crissinger 1	¶1½	....
Crissinger 2	¶1	....
VINTON COUNTY—		
Ohio Fuel Gas Co., Throckmorton 1	¶¼	1076

NORTHWESTERN OHIO

LOGAN COUNTY—		
Simms Oil Co., Ammons 1	¶¼	1373
WYANDOTT COUNTY—		
R. W. Kurt & Co. 1	¶¼	1406

INDIANA

GIBSON COUNTY—		
Gem Oil Corporation, Harper 1	*	....
PIKE COUNTY—		
Indiana Southwestern Gas Corp., Reed 1	*	1663
Murphy & Co., Grimes 1	*	....

ILLINOIS

ST. CLAIR COUNTY—		
Ritter & Co., Scheifler 1	*	1150
Hans Wolf, Anderline 3	2	733

For Tabulation and Comparison See Market Section

KENTUCKY

Company, Well and Location	Initial Production Bbls.	Depth
HART COUNTY—		
Jess Watts & Co., Roberts 1	50	....
Unknown parties, Puckett 1	35	....
OHIO COUNTY—		
S. A. Cobb & Co., Howard 3	35	....

MICHIGAN

MIDLAND COUNTY—		
Gordon Oil Co., Noah Skinner 3	2400	3490
ISABELLA COUNTY—		
Meridian Oil & Gas Co., Woods 1	1000	3510

OKLAHOMA

CREEK COUNTY—		
Carpenter et al, Thompson 2, sw c nw sw 22-17-11e	*	1810
MUSKOGEE COUNTY—		
Bryan Pet. Co., Refinberry 1, csl sw se 13-14-16e	¶1	570
Taylor & Geiger, Ware 1, ne c 18-15-15e	*	1339
OKLAHOMA COUNTY—		
Phillips Pet. & Shell, Egermier 1, sw c 23-11-3w	6125	6427
Stauffer et al, Weining 1, sw c ne nw se 15-11-3w	9940	6380
Anderson, Kerr et al, Danbold 1, cel se ne sw 15-11-3w	11530	6425
Wilcox O&G, Lowe 1, nw c ne nw nw 10-11-3w	5650	6385
Denver P&R, King 1, ne sw nw 3-11-3w	12195	6355
S. M. Stauffer, Jones 1, sw c nw nw nw 2-11-3w	13550	6240
Ben Head, Jr., Community 1, se nw se 34-11-3w	*	5409
OKMULGEE COUNTY—		
A. W. Cline, Harrison 8, cel ne sw 19-15-14e (owd)	*	1704
Kirkland & Son, Brown 7, csl nw sw 9-15-13e	*	2546
STEPHENS COUNTY—		
Geo. Pace et al, McMasters 12, nw c sw ne ne 13-2s-8w	*	1499
WAGONER COUNTY—		
L. Price et al, Verner 3, sw c nw 15-17-16e	*	832

KANSAS

COWLEY COUNTY—		
Lehman et al, Page 1, nw sw se 36-32-4e	*	1498
HARPER COUNTY—		
Beeler et al, Bear 1, c ne 21-31-6w	*	1830
McPHERSON COUNTY—		
Slick Estate, Pryor & Lockhart, Stucky 1 (owd) se sw sw 27-20-3w	¶9½	3136
Gratton 1, (owd) ne nw nw 34-20-3w	25	3150
Carey & The Texas Co., Holt 1, (owd) c nw se 13-19-2w	35 ¶1½	2946
Rosenthal et al, Ritz 2, sw se sw 19-19-1w	1210	3418

TEXAS

TEXAS GULF COAST

BARBERS HILL—		
Nat Hunter Producing Co., E. H. Winfree 6	109	5620
CLEAR LAKE—		
Cullen, West, Gulf Prod. Co., George 2	1200	5200
MOSS BLUFF—		
Humble O&R Co., Sterling 8	*	6030

CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
JOINER FIELD—		
Deep Rock Oil Co.-Amerada Pet. Corp., J. T. Stovall (193-ac) 1	2500	3635
Devonian Oil Co.-Barnsdall Oil Co., J. B. Milstead (129-ac) 5	4000	3747
Durbin et al, Holland 1	6000	3740
East Texas Ref. Co., T. Barksdale (10-ac) 1	6500	3700
R. W. Fair Oil Co., Fee (27-ac) 1	3500	3663
Falcon Co., T. O. Mason (148-ac) 1	4000	3642
T. O. Mason (148-ac) 4	7000	3642
Gulf Prod. Co., G. G. Turner (320-ac) 5	7000	3766
Mayfield (101-ac) 3-C	8500	3659
G. G. Turner (320-ac) 7	7100	3701
W. B. Hamilton et al, M. L. Thompson (10-ac) 1	6500	3754
Hollifield et al, Griffin 1	7000	3646
Humble O&R Co., J. R. Box (125-ac) 3	8500	3782
P. R. DeGuerin (121-ac) 4	9000	3735
First Guaranty Bank (80-ac) 4	10,500	3702
Jas. Fuller (115-ac) 4	8000	3684
M. Kangerga (125-ac) 6-B	8500	3663
W. A. Mullikin (166-ac) 4	6000	3699
J. E. Sexton (50-ac) 2-B	9000	3712
E. F. Wooster 1	9000	3789
H. L. Hunt et al, W. R. Fair (136-ac) 7-A	12,000	3651
W. R. Fair (211-ac) 3-C	9000	3640
Sue Hall 1	500	3691
Gus Johnson (31-ac) 1	1200	3819
International Pet. Co., (Staley-Wynne), L. J. Pinkston 1	6000	3650
Kirby Pet. Co., J. Williams (65-ac) 2	10,000	3777
Lucey Pet. Co., B. F. Maxwell (94-ac) 4	8000	3690
Mid-Kansas O&G Co., E. E. Moores (183-ac) 4	7000	3690
Prairie O&G Co., J. B. Wilson (71-ac) 5	12,000	3637
Roeser-Pendleton, Inc., Ras Pool (67-ac) 4	7000	3730
Sinclair O&G Co., A. S. Jarvis (267-ac) 4-A	8000	3682
A. S. Jarvis (267-ac) 5-A	8000	3680
A. S. Jarvis (116-ac) 5-B	9000	3679
A. S. Jarvis (116-ac) 7-B	8500	3695
A. S. Jarvis (25.6-ac) 3-C	7500	3686
W. D. Kinney (579-ac) 13	8500	3639
Mayfield (374-ac) 5-A	9000	3747
Mayfield (149-ac) 5-B	8000	3615
Dora Wright (162-ac) 4	8000	3758
Ethel Wright (10-ac) 1	9500	3692
R. G. Wright (107-ac) 3	10,000	3682
R. G. Wright (107-ac) 5	7800	3705
F. B. Wilson (124-ac) 7	9500	3639
Stroube-Collins-Wheelock, L. J. Pinkston 2	7000	3656
Sun Oil Co., E. O. Henson (54-ac) 3	8000	3678
J. D. Henson (216-ac) 4	2000	3665
H. Schuler (72-ac) 1-B	1200	3673
The Texas Co., First State Bank (160-ac) 2	8600	3690
Tidal Oil Co., J. Flanagan (40-ac) 1	8800	3682
J. R. Irion (73-ac) 3	9000	3694
Ward Oil Corp. et al, E. S. Thrash (200-ac) 5	2000	3790
KILGORE FIELD—		
Atlantic Oil Prod. Co.-Byrd & Frost, Inc., S. G. Andrews (110-ac) 4-A	9000	3643
Barnsdall Oil Co., D. Smith (40-ac) 5	12,000	3593
Byrd & Frost, Inc., H. P. Leverett (23-ac) 1	10,000	3681
Cordova Union Oil Corp. et al, Bean (50-ac) 4	5000	3662
Deep Rock Oil Co., A. Z. Jeffrey (26-ac) 1	3000	3751
Doss-Jones Oil Co., E. Hagler (30-ac) 2	9400	3582

Company, Well and Location	Initial Production Bbls.	Depth
W. H. Etheridge-Rio Grande Oil Co., Weiss (66-ac) 1	8500	3648
C. A. Everts Drl. Co., H. F. Crews (20-ac) 1	7000	3804
Flanagan Prod. Co., W. B. Walker (91-ac) 1	250	3604
Friedman Oil Corp., Mayfield 1	9000	3667
Gold Star Oil Co., J. A. Butts 1	11,000	3530
Gulf Prod. Co., C. Brown (60-ac) 1	12,000	3551
C. E. Christian (277.65-ac) 7-C.	10,000	3699
S. Hilburn (35-ac) 4	9000	3574
J. N. Jarrett et al, Paul Jones 1	8000	3652
Kathleen Oil Co. (Hicks Drlg. Co.) J. N. Peterson (16-ac) 2	11,000	3640
Magnolia Pet. Co., V. H. Barton (17.87-ac) 2	12,000	3719
W. P. Moore (153.64-ac) 10	11,000	3681
Pelican Nat'l Gas Co., Spear-Laird (92-ac) 2	12,000	3642
Prairie O&G Co., A. A. Lockhart (87-ac) 1	9000	3643
A. A. Lockhart (87-ac) 2	8500	3687
Republic Prod. Co., J. H. Scoggins (136-ac) 1	5000	3685
Shell Pet. Corp., J. S. Elder 2-A	5000	3592
W. W. Elder (157-ac) 9	9000	3584
Rosa Russell 8	6000	3681
Mrs. Dorcas Wills (112-ac) 4	7000	3642
Sinclair O&G Co., S. G. Andrews (200-ac) 3	8500	3457
M. T. Cole (666-ac) 13	8000	3604
M. T. Cole (666-ac) 14	7000	3630
M. T. Cole (666-ac) 16	6000	3643
A. A. King (290-ac) 9-A, Tract No. 1	12,000	3549
A. A. King (290-ac) 10-A, Tract No. 1	15,000	3510
A. A. King (290-ac) 11-A, Tract No. 1	10,000	3625
A. A. King (290-ac) 12-A, Tract No. 1	12,500	3474
A. A. King 1-B, Tract No. 5	15,000	3452
H. R. Smith et al, D. M. Peterson (6-ac) 1	6500	3603
Snowden & McSweeney Co., Bean (39.9-ac) 4	8600	3669
Spear & B. F. Carroll, Negro Masonic Lodge (¼-ac) 1	10,000	3654
Stanolind O&G Co.'s R. Christian (86-ac) 2	4500	3675
Stroube & Stroube, V. Barton (5½-ac) 1	9500	3751
The Texas Co., W. Davis (64-ac) 5	15,000	3617
S. D. Walker (213-ac) 2	3000	3589
Tidal Oil Co., J. R. Beall (80-ac) 6	8600	3666
Vireca Corp., M. T. Cole (15-ac) 1	2500	3552
Weaver-Crim Corp., Peterson 1	8400	3632
Wolfe & Bradley, M. T. Cole 1	7800	3540
Woodley Pet. Co., Joe Ladd (60-ac) 3	8500	3628
LONGVIEW FIELD—		
W. D. Ambrose et al, Geo. Jones (40-ac) 2	9000	3672
Arkansas Fuel Oil Co., L. E. Orms (55-ac) 2	10,000	3571
Atlantic Oil Prod. Co. et al, Ethel Burnsides (204-ac) 2-A	8500	3545
J. C. McKinley (31-ac) 2	8000	3642
J. C. McKinley (31-ac) 3	8200	3654
J. M. Tuttle (41-ac) 1-B	10,000	3600
J. M. Tuttle (41-ac) 2-B	10,000	3600
Barnsdall Oil Co., G. E. Adams (102½-ac) 3	11,000	3637
J. E. Bristow & Rowan, W. A. Moore 1	7000	3528
California Pet. Corp. of Ven., J. N. Taylor (37-ac) 1	9000	3723
W. M. Clements (58-ac) 1	8700	3678
A. J. Deering (70-ac) 1	6500	3696
Geo. Jones (40-ac) 1	7500	3650
Geo. Jones (40-ac) 2	8500	3650
Mrs. I. Walker (120-ac) 2	9500	3660
Mrs. I. Walker (120-ac) 3	9500	3654
Champlin & Bass, Inc., G. C. Mattox 1	2000	3640
Clark & Cowden, Wilhite 1	15,000	3662
Columbia O&G Co., G. A. Castleberry (14-ac) 1	*	3672
Cox & Jake Hamon, Jr., L. A. Rodden (110-ac) 2	7900	3574
Devonian Oil Co., L. C. Ingram (80-ac) 1	9200	3558
East Texas Ref. Co., D. Caldwell 3	7000	3514
Empire Gas & Fuel Co., J. W. Akin (100-ac) 1	9500	3652
F-H-E Oil Co., M. Christian (16-ac) 1	12,000	3654
H. Hanbury et al, T. L. Bray 1	8000	3664
J. W. Hawkins et al, Shiloh School 1	7500	3675
Humble O&R Co., A. L. Hughes (91-ac) 3	5000	3634
W. R. Hughes (185-ac) 4	8500	3672
Mary Killingsworth (77-ac) 4	10,000	3643
I. D. Smith (100-ac) 2	7500	3648
M. Wills (70-ac) 2	8600	3676
G. W. Willingham (50-ac) 1	10,000	3699
Jay-Kay Oil Co., (Kochtitzky & Johnson), B. Victory (44-ac) 1	2000	3686
Lloyd Oil Corp., B. B. Fenton 1	8000	3670
J. J. Fuller 1	8500	3700
Alfred Macmillan et al, J. R. Fenton (30-ac) 3	15,000	3600
Magnolia Pet. Co., R. A. Adkins (100-ac) 5	8500	3733
E. H. Brawley (80-ac) 3	15,000	3498
L. J. Everett (171.1-ac) 4	9000	3696
O. F. Smith (97-ac) 3	9000	3632
Geo. Miller & Ray, Floyd Jones (23-ac) 1	†	3425
Pederson & Merritt, Gladewater School (3-ac) 1	7000	3626
Pilot Oil Co., T. B. Harris (91-ac) 1	9000	3519
Prairie O&G Co., I. Isley (100-ac) 5	12,000	3506
I. Rudman et al, M. Fenn 1	9500	3671
Satellite Oil Co., L. M. Colburn 1	10,000	3553
Schroeder et al, J. C. Bumpass 1	8500	3602
Selby O&G Co. et al, H. R. Snavely (118-ac) 3	8000	3605
P. J. Snavely (361-ac) 2	10,000	3560
M. C. Sells et al, R. Fisher 1	7500	3616
Shell Pet. Corp., H. Hampton (169-ac) 2	8600	3652
C. C. Slaton (100-ac) 1	8000	3648
C. C. Slaton (100-ac) 2	8000	3648
E. A. Showers & W. A. Moncrief, W. McCrary 1	8500	3490
Sinclair O&G Co., J. W. Akin (96-ac) 5	8400	3600
M. Moncrief (252-ac) 9	9000	3564
M. Moncrief (252-ac) 10	10,000	3552
M. Moncrief (252-ac) 11	9200	3612
M. Moncrief (252-ac) 12	8800	3569
M. Moncrief (252-ac) 15	9000	3609
J. R. Williams (82-ac) 4	8000	3524
Sun Oil Co., J. M. Haynes (202-ac) 6	7500	3621
J. C. McKinley (80-ac) 3	6000	3661
A. J. Watkins (55-ac) 1	2500	3712
Stanolind O&G Co., Cox-Hamon (72-ac) 2	7500	3554
Stanolind-Simms Oil Co., M. Lemaire (38-ac) 1	8500	3588
The Texas Co., G. W. Clarke (60-ac) 3	7200	3620
Tidal Oil Co., A. F. Sheppard (114-ac) 2	11,000	3681
Vacuum Oil Co., R. B. White (88-ac) 5	10,000	3573
W. W. Wheeler et al, J. B. Webb (11-ac) 1	3000	3706
J. O. Whittington et al, J. C. Bumpass (31-ac) 1	9000	3554
R. Christian (27-ac) 2	12,000	3607
Yount-Lee Oil Co., B. Calvin (119-ac) 2	7000	3572
J. C. McKinley 1-D	6500	3614
J. C. McKinley 1-E	8500	3602
Maud Smith 2-A	10,000	3574
Julia Snoddy 2-B	9500	3601

SOUTH LOUISIANA

EAST HACKBERRY—		
Jim Oil Co., (J. G. Sutton) Erwin 2	3000	2969
Calcasieu Oil Co., Watkins 27	1000	2982

SOUTH TEXAS

DUVAL COUNTY—		
Frank Garvis' Shallert 1	*	1450
TRAVIS COUNTY—		
Fritz Fuchs' Ballerstadt 1	*	1225
WEBB COUNTY—		
O. W. Killam's Bruni 3	*	1845

MISSISSIPPI

HINDS COUNTY (Jackson)—		
Hilgard Gas Co., Mississippi Company 1, 4-5-1e	*	2551
RANKIN COUNTY (Jackson)—		
Joseph Alexander, Trustee, Wright 1, 13-5-1e	¶40	2423
Willis & Culley, Applewhite & Holden 1, 12-5-1e	¶4	2381

NEW MEXICO

LEA COUNTY—		
Culberson & Conrad, State 1	*	5005

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CALIFORNIA

DOMINGUEZ—Shell Oil Co., Reyes 41, 33-3-13. Union Oil Co., Hellman 17, 33-3-13.

FRUITVALE—E. P. Jorgenson, Jorgenson-Camenish 1, 23-29-27.

KINGS COUNTY—W. Byron Neil, No. 1, 32-22-20.

MIDWAY—Republic Pet. Co., Hale McLeod 25-A, 8-32-23.

SAN LUIS OBISPO COUNTY — Emerich Oil Co., No. 1, (—)-28-12.

LOUISIANA

IBERIA PARISH—Jefferson Lake Oil Co., New Orleans, Lake Peigneur 25, ..-12s-5e, 400 ft due n of 24 in Lake Peigneur.

SABINE PARISH—Dangail Oil & Gas Co., Oklahoma City, Nulton 3, 1-7n-13w, 330 ft n and 330 ft e of sw cor nw¼ ne¼. Exchange Pet. Co., Shreveport, La., L. L. Lbr. Co. No. B-1, 35-8n-11w, 330 ft n and 330 ft e of sw cor ne¼ nw¼.

OKLAHOMA

CARTER COUNTY—Paul Turner et al, Carter 1, sw c nw 13-1s-3w.

CREEK COUNTY—National Investors Co., Posey 1, nw c sw se, 17-16-8e (owd); Wilrough et al, Stewart 2, cwl nw ne 32-17-12e; Magnolia Pet. Co., Boone 5 (owd) cel sw se 34-17-7e; Baltzell et al, Lyons 1, se c ne 11-18-11e; Elson et al, Gage 1, sw c nw 31-19-9e.

HUGHES COUNTY—Jarvis & Holmes, Fish 1, ne nw ne 30-7-8e.

MUSKOGEE COUNTY—Ash Bros. Spaulding 1, (owd) ne c nw se 8-15-18e; Mack Drlg. Co., Peterson 3, nw c se sw nw 34-16-15e.

OKMULGEE COUNTY—Henley et al, Lee 1, nw c se sw 26-15-12e.

PAYNE COUNTY—Wood Oil Co., Curley-Chief 1, (owd) sw c se 33-19-5e.

PONTOTOC COUNTY — Stanclind O&G, Roper 3, se c nw 32-5-5e.

SEMINOLE COUNTY—Bur-Kan Petroleum Cl, Charty 1, nw se sw 29-6-6e.

STEPHEN COUNTY—George Pace et al, McMasters 13, nw c ne 13-2s-8w.

COFFEY COUNTY—Aikman & Baker, Poumire 1, sw c nw 14-22-13e.

COWLEY COUNTY—Lewis Production Co., Penringer 1, sw ne nw 20-31-6e; Whitter et al, Cassoday 1, ne c sw 19-34-3e.

ELLSWORTH COUNTY—M. R. Buck et al, Jirik 1, se c 10-16-10w.

McPHERSON—Slick Estate, Pryor & Lockhart, Gratton 2, (owd) sw c 34-20-3w; J. P. Breslin et al, Flook 1, ne c nw 35-19-2w; Vernon O&G et al, Thomas 1, ne c sw 26-19-2w; Blankenship Pet. Corp. et al, Minear 1, nw ne ne 21-19-1w; Mid-Kansas O&G, Whitwright 2, c sw sw 30-19-1w.

RICE COUNTY—Ralph Wixon et al, Kelly 1, (owd) sw c nw 22-20-10w.

SEDGWICK COUNTY—Continental Oil Co., Casey 1, sw c nw 15-25-1e; Continental Oil Co., Black 1, sw c 9-25-1e.

TEXAS

ARCHER COUNTY—Union Oil Co., Dallas, J. A. Kunkel, 40, 5, B 4, T. McCoy sur, 300 ft ne of 1. Bridwell Oil Co., Wichita Falls, Oil Inv. B, 498, 20, J. Richards sur, 520 ft from w and 200 ft from n line lot 5. Waggoner & Gose, Wichita Falls, Langford, 100, 1, B 135, J. W. Harris sur, 330 ft from s and w lines.

CHAMBERS COUNTY—Sun Oil Co., Beaumont, J. F. Wilburn, 65, 12, Wm. Hodge sur, 668 ft from w and 40 ft from n line.

DUVAL COUNTY — Texas Co., Houston, Bishop, 960, 3, S 135, GB&CNG sur, 330 ft from n and 1175 ft from w line sw¼ of sw¼. Humble Oil & Refg. Co., Houston, P. E. White, 640, 2, S 58, 990 ft from s and 1320 ft from w line of sec. Magnolia Pet. Co., Dallas, J. O. Wilson, 1920, 6, S 136, GB&CNG sur, 330 ft from s and e lines of n½ of sec.

For Tabulation and Comparison See Market Section

EASTLAND COUNTY—Texas Co., Cisco, J. T. Stamp, 90, 1, S 77, B 4, H&TC sur, 660 ft from w and 500 ft from s line.

FISHER COUNTY—Texas Co., Fort Worth, P. H. Miller, 148, 1, S 72, B 1, H&TC sur, 250 ft from n and e lines.

GREGG COUNTY — Jones-Doss Oil Co., Longview, E. Hagler, 30, 3, Jno. Caruthers sur, 330 ft from n and e lines. J. O. Whittington, Longview, Center Baptist Ch. 3, 1, W. H. Castleberry sur, 175 ft from s and 168 ft from e line. A. W. Henderson, Terrell, Sabine Valley Ch. 1, 1, Jno. Ruddle sur, 105 ft from n and e lines. R. W. Burnett, Gladewater, Gladewater 1, 1, M. Dillard sur, center of blk. 57. C. K. Dawson, Ponca City, Okla., L. P. Griffin, 4½, 1, M. Van Winkle sur, 160 ft from n and e lines. W. E. Davis, Tulsa, Okla., J. T. Jeter, 2, 1, Hokit sur, center. Burnett & Foshee, Gladewater, J. Bell, 2, 1, M. Dillard sur, 200 ft from n and 82 ft from w line. Badgett & Cooper Drilling Co., Longview, C. C. Clemons, 30, 3, D. Sanchez sur, 330 ft from s and w lines. Sabine Oil Corp., Longview, T. M. Collins, C, 119, 7, G. W. Hooper sur, 330 ft from s and e lines. W. R. Jones, et al, Longview, P. Doby, 21, 2, M. Irwin sur, 568 ft from e and 263 ft from s line. H. W. Elliott, Fort Worth, R. Lacy, 18, 1, M. Van Winkle sur, 200 ft from n and 422 ft from e line. Arkansas Fuel Oil Co., Shreveport, La., H. Stephens, 57, 2, W. H. Castleberry sur, 330 ft from n and e lines. A. McCrary, 65, 3, W. H. Castleberry sur, 330 ft from n and e lines; 4, 990 ft from e and 330 ft from s line; 5, 795 ft from w and 330 ft from s line. S. G. Smith, 60, 1, W. H. Castleberry sur, 330 ft from n and e lines. F. T. Rembert, 86, 1, Jno. Ruddle sur, 330 ft from s and w lines. M. D. Allison, 59, 4, Wm. Robinson sur, 330 ft from s and e lines. L. E. Orms, 55, 2, W. H. Castleberry sur, 330 ft from n and 264 ft from w line. M. D. Allison, 59, 3, Wm. Robinson sur, 854 ft from w and 300 ft from s line. C. Brown, 100, 2, Wm. McCurry sur, 320 ft from n and 330 ft from e line; 3, 330 ft from s and w lines. A. Lee, 67, 2, Wm. Robinson sur, 330 ft from s and w lines; 3, 250 ft from n and e lines. G. A. Castleberry, 52, 4, D. Sanchez sur, 288 ft from n and 367 ft from w line. Stanolind Oil & Gas Co., Longview, F. M. Fonville, 100, 3, Wm. Tyndale sur, 1000 ft from e and 330 ft from s line. J. F. Wilhite, 29, 4, G. W. Hooper sur, 200 ft from e and 330 ft from s line. O. J. Albright, 90, 1, W. H. Castleberry sur, 330 ft from n and e lines. B. Jones, 27, 2, G. W. Hooper sur, 330 ft from n and 378 ft from e line. Selby Oil & Gas Co., Tulsa, Okla., H. R. Snavely, 118, 3, J. R. Crozby sur, 250 ft from w and 943 ft from s line. Snavely, 321, 9B, F. W. Johnson sur, 660 ft se of 1B; 2B, 330 ft from n and 1320 ft from e line. Texas Co., Shreveport, La., E. M. Woods, 90, 5, M. Dillard sur, 330 ft from s and e lines. J. M. Dickson, 88, 3, Wm. McCurry sur, 330 ft from s and w lines. H. T. Elder, 86, 7, M. Scott sur, 678 ft s of 3. Cox & Hamon, Ardmore, Okla., L. A. Redden, 110, 7, L. J. Rigsby sur, 330 ft from n and e lines. E. Lacy, 50, 3, Jno. Ruddle sur, 330 ft from n and e lines. Fee, 73, 2, Jno. Ruddle sur, 112 ft from w and 225 ft from s line. Sinclair Oil & Gas Co., Fort Worth, M. Moncrief, 307, 15, Wm. Castleberry sur, 1456 ft from n and 106 ft from e line; 18, 1052 ft from w and 330 ft from s line. M. Lawson, 40, 4, McAnally sur, 330 ft from s and e lines. A. A. King, B, 111, 4, J. G. Walker sur, 330 ft from s and w lines. Amerada Pet. Corp., Tulsa, Okla., Continental Bk., 102, 1, H. Edwards sur, 330 ft from s and w lines. Mrs. C. Bumpas, 98, 3, W. H. Castleberry sur, 330 ft from s and w lines. Rowan & Nichols Oil Co., Fort Worth, B. C. Todd, 25, 1, W. H. Castleberry sur, 294 ft from n and 520 ft from w line; 2, 299 ft from n and 330 ft from e line. Humble Oil & Refg. Co., Houston, L. Christian, 35, 3, G. W. Hooper sur, 200 ft from w and 330 ft from s line. A. K. Hughes, 91, 6, K. H. Hampton sur, 310 ft from e and 350 ft from n line. Houston Oil Co., Houston, T. W. Lee, 110, 1, D. Ferguson sur, 300 ft from s and w lines. Jackson, Wise & Snedden, Tyler, R. Corbin, 40, 2, H. H. Edwards sur, 330 ft from n and w lines. Yount-Lee Oil Co., Beaumont, F. K. Lathrop, C, 114, 2, Wm. Robinson sur, 330 ft from n and e lines. F. H. E. Oil Co., Fort Worth, R. Christian, 61, 1, G. W. Hooper sur, 330 ft from n and e lines. Shell Pet. Corp., Dallas, G. W. Richey, 176, 4, L. J. Rigsby sur, 438 ft from w and 1188 ft from s line. Cranfill & Reynolds, Houston, J. M. Blackman, 36, 3, W. P. Chisum sur, 330 ft from n and w lines. Magnolia Pet. Co., Dallas, M. B. Hughey, 80, 3, Wm. McCurry sur, 1650 ft from n and 330 ft from e line. J. A. Parnell, 40, 1, H. H. Edwards sur, 330 ft from s and e lines. Gulf Prod. Co., Houston, S. Hilburn, 80, 6, A. Norris sur, 330 ft w of center of e line. Simms Oil Co., Dallas, J. J. Flewellen, 200, 2, M. Mann sur, 400 ft from s and 330 ft from w line. Shell Pet. Corp., Dallas, J. W. Akin, 100, 1, W. H. Castleberry sur, 330 ft from n and w lines; W. T. Burnside, 160, 3, F. W. Johnson sur, 666 ft s of No. 2; N. Jobe, 84, 1, P. W. Warraner sur, 1849 ft from n and 330 ft from e line. Atlantic Oil Prod. Co., Dallas, J. M. Tuttle, B, 41, 2, W. M. Castleberry sur, 660 ft se of No. 1; 3, 330 ft from n and 345 ft from e line.

GUADALUPE COUNTY — J. M. Scott, Staples, E. Drumm, 31, C. Campbell sur, 250 ft from w and 150 ft from s line.

HARRIS COUNTY — Warner-Quinlan Co., Houston, S. Minchen, 4, 1, B 1, S 1028, BBB &C sur, 50 ft from e and 44 ft from s line; Koehler, 626, 37, J. B. Stevenson sur, 630 ft from n and 717 ft from w line; Stevenson, 235, 46, J. B. Stevenson sur, 1690 ft from e and 1630 ft from s line.

HARDIN COUNTY — Rio Bravo Oil Co., Houston, Fee, 158, C122A, J. F. Cotten sur, 200 ft w of No. 118A.

LEON COUNTY — Selzer Drilling Co., Centerville, J. M. Blair, 1235, 1, S 19, L. Hibbard sur, 1010 ft from n and 1986 ft from w line.

LOVING COUNTY—Columbia Oil & Gas Co., Dallas, J. J. Wheat, 480, A1, S 77, B 1, W&NW sur, 330 ft from s and w lines of sec.

MOORE COUNTY—Magnolia Pet. Co., Dallas, A. Nield, 320, 1, S 361, B 44, H&TC sur, 330 ft from s and e lines of n½.

McMULLEN COUNTY—Jacob, Buzzini & Pickett, Inc., San Antonio, L. Jacob, 200, 1, W. H. Jacob, No. 8 sur, 1000 ft from n and 800 ft from e line.

NUECES COUNTY—Saxet Gas Co., Houston, Weil, 204, 5, 3041 ft from n and 333 ft from w line.

RUSK COUNTY—Hill & Hill, Fort Worth, Futch-Cooper, 50, 1, Jas. English sur, 330 ft from n and 52 ft from e line. J. L. Collins & Co., Corsicana, L. J. Pinkston, 53, 2, Cadena & Pru sur, center. Inland Oil Co., Dallas, Motley-Irion, 8, 1, J. Lindley sur, 214 ft from n and 400 ft from e line. Spandsco Oil & Royalty Co., Dallas, W. P. Brett, 49, 2, M. J. Pru sur, 330 ft from n and w lines. Ebony Oil Co., Henderson, A. J. Deason, 25, 2, M. J. Pru sur, 150 ft from s and e lines; 3, 418 ft n of No. 2. Beard & Hammond Oil Co., Fort Worth, W. P. Keeling, 22, 2, F. Cordova sur, 159 ft from n and 168 ft from w line. West Florida Co., Tyler, A. Givens, 5, 1, R. W. Smith sur, 175 ft from n and 150 ft from w line. Snowden & McSweeney Co., Fort Worth, R. H. Laird, 133, 7, Chisum-Ruddle sur, 1509 ft from e and 330 ft from s line. Dink Oil

Corp., Tyler, A. Givens, 2, 1, R. W. Smith sur, 150 ft from n and w lines. S. V. Guerin, Tyler, L. Brightwell 2, 1, R. W. Smith sur, 176 ft from n and 152 ft from e line, corrected location. Falcon Co., Fort Worth, T. O. Mason, 148, 6, J. B. Cadena sur, 330 ft from n and 575 ft from w line. G. H. Vaughn, Dallas, E. W. Reagan 28, 2, Cordova sur, 173 ft from e and 330 ft from s line. Nash & Windfohr Oil Corp., Graham, H. L. Griffin, 80, 1, J. B. Cadena sur, 330 ft from w and 504 ft from s line. W. L. Allen et al, Tyler, L. Toliver, 6, 1, J. Ximinez sur, 150 ft from s and e line. Jackson, Wise & Snedden, Tyler, J. H. Stephens, 27, 1, J. Womack sur, 448 ft from n and 440 ft from s line; P. C. Warren, 45, 1, J. Womack sur, 390 ft from n and 253 ft from e line. Humble Oil & Ref. Co., Houston, L. Hill, 60, 1, Geo. Berry sur, 450 ft from w and 613 ft from s line; J. E. Sexton, 70, A2, T. J. Martin sur, 1027 ft from n and 150 ft from w line. H. L. Hunt, Tyler, A. Wooley, 53, 2, E. Collard sur, 330 ft from e and 1336 ft from n line. Sun Oil Co., Dallas, H. Schuler, A, 50, A3, J. B. Cadena sur, 330 ft from n and 476 ft from w line. Sinclair Oil & Gas Co., Fort Worth, D. Bradford, 35, 3, J. Ximinez sur, 330 ft from s and 340 ft from w line. Houston Oil Co., Houston, A. Thompson, 40, 4, H. Hobson sur, 655 ft from e and 190 ft from s line. Texas Co., Shreveport, La., J. W. Wilson, 134, 6, D. Collins sur, 330 ft from n and e lines. Shell Pet. Corp., Dallas, J. H. Spivey 88, 4, M. McCabe sur, 330 ft from n and 1998 ft from w line. Mid-Kansas Oil & Gas Co., Shreveport, La., E. E. Moores, 182, 7, J. B. Cadena sur, 330 ft from n and 1875 ft from e line; M. M. Cross, 531, 3, J. B. Cadena sur, ne corner; 4, 1578 ft w of No. 3; 5, 660 ft w of No. 4; 6, 330 ft from n and 438 ft from w line. Arkansas Fuel Oil Co., Shreveport, La., J. W. Wheelis, 80, 4, J. H. Penney sur, 330 ft from s and e lines; G. Ferguson, 73, 4, M. J. Pru sur, 330 ft from n and w lines. Mid-Kansas Oil & Gas Co., Shreveport, La., E. E. Moores, 182, 5, J. B. Cadena sur, 180 ft w of center of e line, corrected location. Republic Production Co., Longview, L. P. Thrash, 40, 2, F. Cordova sur, 602 ft w of No. 1. Stanolind Oil & Gas Co., Longview, M. Schuyler, 51, A1, J. B. Cadena sur, 330 ft from s and e lines.

REFUGIO COUNTY — Moody-Seagraves Corp., Houston, St. John, 203, 2A, Blk. 14, Refugio sur, 330 ft from n and 820 ft from w line.

SMITH COUNTY — East Texas Ref. Co., Dallas, S. S. Cook, 28, 1, Jas. Jordan sur, 330 ft from n and e lines; R. G. Wright, 20, 1, J. Vargas sur, 288 ft from n and 330 ft from e line. Sinclair Oil & Gas Co., Fort Worth, Mayfield, A, 374, 8, Jas. Jordan sur, 330 ft n of center of s line; J. Wiley, 20, 1, Jas. Jordan sur, 208 ft from w and 150 ft from s line; Mayfield, A, 374, 5A, Jas. Jordan sur, 660 ft n of No. 4. C. B. Bunte, Inc., Tyler, A. S. Jarvis, 92, 2, J. Vargas sur, 330 ft from n and e lines; 3, 338 ft from e and 330 ft from s line; 4, 330 ft from e and 1487 ft from s line; 5, 340 ft from n and 330 ft from w line. E. H. R. Sabens, Tyler, T. O. Wright, 1, 1, J. Vargas sur, center.

TRAVIS COUNTY—Speed, Bass & Fuchs, Elgin, R. A. Chadwick, 105, 1, A. C. Caldwell sur, 160 ft from n and 1500 ft from w line.

UPSHUR COUNTY—W. F. Sorrells, Gilmer, R. N. Brawley, 16, 1, M. Mann sur, 330 ft from s and e lnes. J. I. Roberts, Longview, A. L. Jenkins, 37, 1, H. H. Edwards sur, 311 ft from n and 500 ft from e lne; 2, 311 ft from n and 500 ft from w line. Albert Crenshaw, Wichita Falls, White, 12, 1, T. Allen sur, 330 ft from n and 238 ft from w line. J. G. Page, Fort Worth, East Mt. Sch., 3, 1, Wm. King sur, 150 ft from s and e lines. Humble Oil & Ref. Co., Houston, D. C. Shelton, 19, 1, Wm. King sur, 273 ft from w and 156 from s line. Mudge Oil Co., Tyler, J. D. Richardson, 92, 2, D. Ferguson sur, 150 ft from n and 300 ft from e line. Atlantic Oil Prod. Co., Dallas, W. H. Meyers, 128, 4, A. T. McGee sur, 500 ft from w and 1241 ft from s line; 5, 841 ft n of No. 4; 6, 996 ft n of No. 3.

VAN ZANDT COUNTY — Pure Oil Co., Fort Worth, A. R. Tunnell, 101, 7, J. Walling sur, 711 ft from n and 733 ft from w line; R. L. Wells, 138, 13, M. Gross, 200 ft n of center of s line; J. A. Bracken, 69, 4, J. Walling sur, 735 ft from w and 782 ft from s line; J. A. Bracken, 44, 2, J. Walling sur, 250 ft from w and 685 ft from s line.

VICTORIA COUNTY—C. B. Bunte, Inc., San Antonio, Keeren, 2500, 1, M. Leon sur, 3000 ft from e and 1600 ft from s line.

WARD COUNTY—Eppenauer Drilling Co., San Angelo, T. H. Powell, 40, 1, S 17, B 34, H&TC sur, 330 ft from s and e lines.

WICHITA COUNTY—L. T. Burns, Wichita Falls, G. Heiserman, 134, 8C, HT&B sur, 650 ft w of No. 6.

YOUNG COUNTY—Cable Oil Co., Wichita Falls, S. E. Snyder, 300, 22, R. Wilson sur, 400 ft n of No. 11. Wooten & Reed et al, Graham, J. W. Davis, 50, 1, G&BN sur, 2210 ft from s and 1487 ft from w line. L. V. Wood, Olney, N. Brooks, 40, 1, 637 TE&L sur, 150 ft from n and 300 ft from w line. H-Y Oil Co., Fort Worth, B. P. Larimore, 40, 4, 2247 TE&L sur, 150 ft from n and 1050 ft from w line. C. C. Mason, Newcastle, Jeffreys, 80, 1, 44 TE&L sur, 150 ft from n and 783 ft from e line.

A. P. I. Public Relations Department Keeping World Informed About Petroleum Industry

New York.—Few realize the rapidity with which changes take place in the petroleum industry or the overnight growth of developments which, new today, become established practice tomorrow. Indeed, it is difficult for any one agency to keep closely in touch with all that is new and different even in the industry's main branches, producing, refining and marketing. Yet this task, plus coordination and publication of news developments of the organization it represents, has been undertaken by the American Petroleum Institute's Department of Public Relations.

To the trying job of official observer of the industry is added the equally sizeable undertaking of recording and publicizing the work of the Institute's three divisions, its several departments, its various districts, sections and chapters, and its hundreds of committees. Both recording and publicizing require not only a knowledge of latest news developments, but an appreciation of trends and objectives and an understanding of backgrounds obscure to the average observer.

So numerous and widespread have become the activities of the Institute alone, that the department publishes weekly for the accommodation of the trade and general press a "Weekly Press Release" which, in its six to 16 pages, records Institute news developments throughout the country. The mid-year meetings of the three divisions and the annual meeting of the Institute itself constitutes in themselves sizable publicity tasks requiring weeks of preparation. Oil company house organs are provided with information concerning the industry through the medium of two monthly publications, and a third, a news clip sheet, is issued monthly for the benefit of newspaper editors who wish to keep in touch with the trend of industrial developments. Once each year the department compiles information for and directs the publication of "Petroleum Facts and Figures," the industry's year book. After every meeting it edits and supervises the publication of the technical papers presented. Its work with publications extends even to a daily basis through preparation every working day of the "Daily Oil Digest," a review of newspaper and magazine items on the industry and related interests.

Special articles on the industry frequently are prepared at the request of newspapers and magazines and much time is devoted to assisting writers in preparing material. The department functions also as an information bureau, answering in the course of a year thousands of inquiries on every conceivable subject related to the general subject of oil. It was these repeated inquiries concerning the nature of oil and the services rendered by the industry that led to publication recently of the book, "Oil," a story of petroleum fundamentals, and some time ago of the booklet on gasoline. "What Makes the Old Bus Go?". Numerous other publications are issued upon subjects for which, inquiries reveal, there is need of better general understanding.

Thousands of newspaper clippings, as well as magazines and newspapers themselves, are read and filed in the department, or referred to those directly interested. Particular attention is paid to special subjects, such as the gasoline tax and gasoline tax evasion, and other matters directly affecting the industry upon which the department may be asked to function as a clearing house for current information.

The department is located at Institute headquarters at New York. It is under the direction of Harry Benge Crozier, formerly of Dallas, Texas, who recently succeeded Leonard M. Fanning. The assistant director is Victor H. Scales. The editor of the "Daily Oil Digest," is Miss Beulah Powers. Much of the department's editing work, as well as all its activities in recording and publicizing newly introduced legislative measures affecting the industry, are in charge of Miss Eloise M. Michel. Assistants in the department are Mrs. Elizabeth Johnson and Miss Lillie Swanson.

Wildcat Reports from All Sections

CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ANDERSON COUNTY—		
Rianjo Pet. Co., J. M. Lynn 1	*	2755

TEXAS GULF COAST

Completions

Company, Well and Location	Initial Production Bbls.	Depth
BURLESON COUNTY—		
Mid-South Oil Co., Duckworth 1 ..	*	3070

AUSTIN COUNTY—O'hara et al, F. Nelius 1, 5 mi se Bellville, lcn 650 ft n Schroeder 1 in M. J. Cummins Hacienda, dk. Great Southern Drlg. Co.'s (was Pomical & Boletka's) F. Schbajas 1, 3 mi s Bleiblerville, ru and sd.

BRAZORIA COUNTY—Texas Co.'s Belcher 1, Manvel dist., flowing 995 bbls; Belcher 2, 1000 ft se Belcher 1, dk; Cave Heirs 1, Damon Mound dist, 75 ft sw and 150 ft se at rt angles from n cor Blk 73, Lot A, Wilson subdiv, A. Darst sur, ru. United Oil Syndicate's Levitt 1, 3 mi n Danbury, Jno. Peske sur, dr stem stuck at 1590 ft.

BURLESON COUNTY—Marek & Sons' A. Marek 1, 2½ mi sw Tunis, N. McFaddin sur, dr sh 2050 ft. Mrts et al's Boyett 1, 5 mi se Wellbourne, sd at 3000 ft.

CHAMBERS COUNTY—Humphrey's Corp.'s Kirby H-8, Barbers Hill dist, r to set cas on O.S. at 4381 ft. Sun Oil Co.'s O. K. Winfree 2, Barbers Hill dist, prep to pump at 5130 ft.

FORT BEND COUNTY—Cullen & West & Gulf Prod. Co.'s George 2, Thompson dome, Clear Lake, comp for 1200 bbls barefooted at 5200 ft; Lockwood Sharp 2-A, test of sn at 5150 ft unsatisfactory, will dr deeper; Lockwood Sharp 3-A, 700 bbls salt water from test at 3820 ft; Lockwood Sharp 4-A, dk. Stone & Wyman's Beard 1, between Long Point and Damon, dr gbo and li 1310 ft. Coronado Oil Co.'s Blakely 1, Blue Ridge dist, dk.

GALVESTON COUNTY — Yount Lee Oil Co.'s Cade 22, High Island, set 7-inch cas on show of oil at 5130-60 ft, drlg plug; Cade 23, drlg 4000 ft.

GRIMES COUNTY—Rianjo Oil Co.'s Cuthrell 2, 3 mi e Carlos, Pat O'Connor sur, dr 2945 ft hd sn.

HARRIS COUNTY—H. H. Givens & Daybault's Lobit 1, 18 mi nw Houston, Addicks, stuck at 2450 ft. Gulf Prod. Co.'s Taylor 33, Pierce Junction dist, dr 3035 ft. Highlands Pet. Corp.'s Haney 1, 5 mi w Barbers Hill, dr 5879 ft li.

HILL COUNTY—C. Hauseman's Griffith 1, Waddell sur, sd 3170 ft.

HOUSTON COUNTY — Apex Drlg. Co.'s Thompson Bros. Lbr. Co. 1, 6 mi s Lovelady, Jno. Spears sur, sd 2365 ft. C. T. McMannis et al's (formerly Snow et al's) D. M. Herod 1, Procella sur, spd and sd. Ramsland et al's Pennington 1, 4 mi w Grapeland, sd rk 1650 ft.

JACKSON COUNTY — Chicago-Gulf Co.'s Drushell 10, Edna gas field, prep to cmt 6⅝ inch cas at 2635 ft.

JASPER COUNTY—Hext Drlg. Co.'s Flournoy 1, 4 mi se Jasper, B. F. Joes sur, dr 1200 ft gbo.

JEFFERSON COUNTY — Humble Oil & Ref. Co.'s Nelson 1, 4 mi se Cheek, dr sh 2644 ft. Pipkin & Elam's Broussard 1, 2 mi w Sabine, McGaffy sur, set surf cas.

LEE COUNTY — Wheeler et al's Stoltz-Frede 1, 3 mi nw Lexington, sd in sh at 3796 ft.

LIBERTY COUNTY—L. B. House's C. T. Palmer 1, ¾ mi s Cleveland, 15 mi n Dayton dome, sd at 3161 ft, prep to make dr st test.

MATAGORDA COUNTY—Harvey Smith's Boker 1, Citrus Grove dist., J. V. Criswell sur, dr w well. United North & South Dev. Co.'s Stoddard 1, Buckeye Townsite, dr 4137 ft. Hamill & Powers' Myers 1, Markham dist, lcn 210 ft n of E. M. Hamill et al's Myers 1, Blk 6, Wm. Hadden sur.

MILAM COUNTY—C. M. Joiner's (Red Bank Oil Co.'s) J. A. Foster 1, 12 mi s Cameron, A. G. Perry sur, td 4680 ft, pulling cas to abn. Dil Tex Oil Co.'s E. Lawson 1, sd in sh 2560 ft. Nolan et al's Beard 1, 4 mi e Thorndale, sd 2000 ft. H. W. Elliott's Marek 1, no report.

MONTGOMERY COUNTY—Humble O&R Co.'s Renn 1, 4 mi s Magnolia, McFarland sur, dr 3755 ft sdy sh. G. W. Strake's So Tex Dev. Co. 1, 2½ mi se Conroe, dr 4520 ft. Pevehouse Oil Co.'s (was Wilhite et al's) Sealey 1, 5 mi w Conroe, spd. Stanolind O&G Co.'s R. M. Gary 1, lcn 1 mi nw Dobbins.

NACOGDOCHES COUNTY—Ginter et al's Neil Wells 1, 15 mi se Nacogdoches, M. H. Chireno sur, sd 3426 ft. Tex Okla. Corp.'s R. T. Driver 1, 12 mi se Nacogdoches, dr sh 2972 ft. Hayter Whited & Mast's G. L. Muckleroy 1, Martinsville dist, coring 4173 ft sh.

ORANGE COUNTY—Crews Oil Co.'s Mansfield 1, Orange dist, dr gbo 1823 ft. The Texas Co.'s Polk-Kuhn Glass Co. 1, Port Neches dist, sn and sh shwg oil at 2805-15 ft.

WHARTON COUNTY—W. H. Wallace's J. N. Lee 1, dr sh 2821 ft.

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn — abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd — shut down; sdtr — sidetracking; sp — spudding; sr — straight reaming; std — standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

SOUTH TEXAS

ATASCOSA COUNTY—Glen Mathis' Mrs. G. M. Martin 2, Navarro sur, 3 mi s Amphion, 100 ft sw No. 1, sd 2980 ft.

BASTROP COUNTY—W. A. Allen's Birmingham 1, King and Millett sur, sd 1220 ft. Texas Dev. Co.'s C. H. Ray 1, Thos. Christian sur, 1 102 mi ne Elgin, dr 1400 ft last rept.

BEE COUNTY — Houston Oil Co.'s J. F. Portis 2, A. Smalley sur, sw Pettus pool, ru. J. C. Hughes et al's P. H. Martin 1, John Lyford sur, just s Holzmark pool, spud in. Humble Oil and Ref. Co.'s Laura Thompson 1, Garrett Roche sur, dr 2906 ft. Lefevre & Buchanan's Geo. A. Ray 1, elev 342 ft. Jno. A. Williamson sur, 2800 ft w Damac Producer, sw Pettus pool, sand cored 3887-3908 ft, set csg 3886 ft, plug back 10 ft, w.o.c. J. S. Mauldin's Mauldin 1, G. A. Kerr sur, just s Pettus townsite, sd 3920 ft. T. B. Slick Estate's Geo. A. Ray 2, G. A. Kerr sur, sw Pettus in Damac pool, making lcn. United Prod. Co.'s Ray 3839, T. Hanson sur, just ne field, dr 6809 ft. H. H. Weinert & C. R. & M. Co.'s George A Ray 1, Jno. A. Williamson sur, Damac pool, dr 600 ft.

BEXAR COUNTY—Alamo Nat. Gas Co.'s (Whipple et al) Gembler 1, Menchaca sur No. 51, nw Dobrowolski gas pool, dr 225 ft. J. E. Anderson's S. A. Suburban Irrigated Farms 1, C. Logan sur, near Kirk, 20 mi sw San Antonio on Chicon Lake Fault, csg set 1117 ft, top Anacacho 1117 ft, sandy lime 1137-1200 ft, show abt 100,000 cu ft gas daily, deepening, to test again. S. W. Blount's S. A. Land & Dev. Co. 1, 1 mi e Medina river on Palo Alto rd, 12 mi s San Antonio, dr 300 ft. Jno. T. Callahan's J. H. Buch 1, J. M. McCamley sur, sp in. Crawford & Terrell's L. F. Ridder 1, J. A. Baerera sur No. 58, sp in. Gatlin Oil Co.'s Vecj 9, A. Montez sur, Dobrowolski pool, lcn. Ewell Neill's J. M. Watson 1, Martinez sur, 10 mi s San Antonio, sd 1100 ft. W. S. Rogers et al's Dunlop 1, Juan Montez sur, sd 612 ft. Schneider, Rees et al's Claussen 1, no San Antonio, SJ&A Sur No. 17, sd 863 ft. Tri-State Oil Co.'s Carruth 1, F. Bolen sur, sd 770 ft.

BLANO COUNTY—Hardy Sitton's Standeford 1, sur 155, 3 102 nw Blanco City, sd 1115 ft; McMillen 1, Benjamin Williams sur No. 125, 2 mi Blanco City, sd 686 ft. Forest Oil Co.'s (Rosenfield et al) Hohenberger 1, sur 94, sd 712 ft. Thomas Hicks et al's Specht & Wiedner 1, Thos. M. Fowler sur No. 27, 2 mi s Twin Sisters, dr 1635 ft.

CALDWELL COUNTY—Joe Bruner's Malone 1, A. Floyd sur, 2 lcns s Salt Flat, sd 1, csg set 2396 ft, td 2572 ft. Ralph Lewis et al's Keith McGee 1, Pinchback sur, ¾ mi sw Mills-McMahon well, spud and sd acct water.

COMAL COUNTY—Caldwell & Lanier's T. J. Byler 1, 10 mi s Blanco City, HE&WT sur No. S-894, sd 754 ft.

DUVAL COUNTY—Cole Pet. Co.'s Benavides 71, blk 8, sur 19, e of Cole field, test 200 ft oil through tester in 10 min, sand 1747-57 ft, set csg w.o.c. Frank Garvis' Shallert 1, Palagana Salt Dome, sur 255, sand 1446-50 ft, set csg 1448 ft, sw, abn. Humble O&R Co.'s White 2, sur 58, S&O pool, dr 1700 ft. Magnolia Pet. Co.'s Wilson 6, Sec. 136, S&O pool, spud in. SR&C & Vacuum Oil Co.'s Duval Land and Cattle Co.'s 5, Sur 293, SRC pool, 6⅝ inch csg set 1720 ft, sand 1723-28 ft, made small well, deepen to 1734 ft, swabbing. Thomas & Tarver's Bishop Land and Cattle Co.'s Welder Wood 1, 16 mi from S&O pool, sec 269, Welder-Wood ranch, dr 1580 ft. The Texas Co.'s Bishop Duval Land Co. 3, sur 135, S&O pool, 6⅝ casg set 2310 ft, sand 2312-16 ft, dr in. Duval Oil Corp.'s Bishop Cattle Co. 6, sur 135, S&O pool, dk.

FRIO COUNTY—Arthur H. Wray's Roche 1, sec 123, A. Hutzler sur, near Big Foot, 1500 sw Burns 1, dr 3120 ft.

GOLIAD COUNTY—Benedum & Trees and Plymouth Oil Co.'s Parks 1, 2900 ft se Gibson Parks 1, set 647 ft 10-inch csg. Neel et al's Pettus 1, J. M. Pettus tract, Pedro Trevino sur, w Goliad, set 410 ft surface csg.

GUADALUPE COUNTY—Harry Bruner's Jim Sherrill 2, Geo. Allen League, near Staples, sd 190 ft for rotary. Barnhill et al's Hoffman 1, between Seguin and Darst Creek, spud in. R. S. Bolling's L. B. Linne 1-B, se cor tract in V. Gotari sur, 8 mi sw Seguin, ru. John F. Camp's Dan Denman 1, Wm. Arrington sur, 2500 ft s Camp well, top chalk 2256 ft, hit crevice 2400 ft, set 6⅝ inch csg, official gauge 1380 bbls, ru to swab, will set liner, showed 80 bbls hour on ¾ choke, 175 pounds pressure. Humble Oil and Refining Co.'s Dan Denman 1-C, Wm. Arrington sur, 900 ft s Camp producer, top chalk 2214 ft, set 6⅝ inch csg top crevice at 2358 ft, completed, official gauge 5460 bbls, showed 300 lbs. pressure on ⅛ inch choke; Dan Denman 2-C, William Arrington sur, Camp pool, move on. W. M. Eiser et al's Wells 1, ne quarter Jose de la Baume sur, spud in. C. McGarity et al's August Wesch 1, H. M. Thompson sur No. 89, 2 mi n Marion, sd 1200 ft. Pray & Chamberlain's Krueger 1, near Guadalupe River, H. Branch sur, ru. Schleter, Asherton & Armstrong's Ogletree 1, Robt. Smith sur, 1 mi n old Luling field, sd 1745 ft.

HAYS COUNTY—J. C. Jones et al's Byler 1, John Ingram sur, 15 mi nw San Marcos, sd 925 ft.

HIDALGO—E. J. Barrett & P. Kanellos' J. D. Brook 1, 15 mi nw Mission, lcn, to dr to 4500 ft. Dayle L. Smith Oil Co.'s Fernandez 5, Porcion 75, 21 mi w McAllen, casing set 3982 ft, salt water sand 3992 ft, gas sand 4010-26 ft, ran open several days, showing plenty salt water and gas, to attempt to cut off salt water and complete.

JIM HOGG COUNTY—O. W. Killam's R. Lopez 2, Blk 4, sur 255, Henne, Winch & Farriss pool, ru.

JIM WELLS COUNTY—Larcro G. & Pet. Co.'s Wade 2, 800 ft s No. 1, Larcro gas field, set 6⅝ inc cas 2921 ft, td 2929 ft, prep to complete. Stanolind O&G Co.'s N. A. Hoffman 1, La Trinidad sur, 4½ mi sw Ben Bolt, sd 5012 ft, for orders.

KARNES COUNTY—V. F. Neuhaus's L. L.

Russell 1, C. Martinez sur just n Kennedy-Runge Highway, sd 1804 ft for fuel. Jones et al's (J. Morrisey) Cochran 1, D. B. McConnell sur, w Kennedy, sd 1012 ft. United North & South Dev. Co.'s Morrell 1, Carlos Martinez sur, 7 mi sw Kenedy, dr 2490 ft.

KENDALL COUNTY—Borgett et al's W. Hagg 1, w Avery sur, sd 1250 ft. F. S. Dible's Ellebracht 1, TW&NG sur No. 77, 12 mi n Sisterdale, sd 50 ft. Dixon Oil Co.'s Behr 1, Jessie Wilson sur, 3 mi s Sisterdale, sd 2715 ft. R. M. Perkins' (W. H. Sartain) Lawhorn 1, 30 ft sw original test, D. L. Richardson sur, sw Kendalia, no rept. Hardy Sitton's W. B. Garvin 1, D. L. Richardson sur, 1 mi ne Kendalia, sd 1480 ft.

KERR COUNTY—Evans and Gant's Seiker and Mears 1, CCSD &RGNR Ry. sur, sec 1605, 2 mi ne discovery, sd 4031 ft sandy shale; Jeff Love 1, J. Martinez sur No. 1594, sd 4060 ft, brown lime. Evans and Sprinkle's Jeff Love 2, sec 1592, ½ se discovery, dr 3550 ft, had slight show 3410 ft. Chester A. Martin's J. E. Young 1, A. E. Bruce sur, ne discovery, 1310 ft, move on 12½ inch csg.

LA SALLE COUNTY—Buckley Ranch O&G Co.'s Buckley et al 1, sur 37, Buckley-Walling ranch, dr 3600 ft. Salt Lake City Oil Co.'s J. F. Mayes 1, sec 19, blk 20, I&GN sur, dr 1300 ft.

LIVE OAK COUNTY—Henderson Coquat et al's H. Hewitt 1, Thomas Adams sur, sec 4, sd 445 ft. V. G. Schimmel's (Texas Pet. Co.) C. L. Terrell 1, s Fort City, D. O. Boyle sur, dr 500 ft, slow dr acct lack water. Phillip's Pet. Co.'s No. 1, sp in.

MAVERICK COUNTY — I. N. Boicourt's Bandera School Land 2, sd 2284 ft. Texas Gas Utilities Co.'s Chittim 8, sec 129, blk 7, I&GN sur, Chittim field, sd 4810 ft.

McMULLEN COUNTY—A. E. Adams' Martin 1, L. E. Melon sur, 15 mi sw Tilden, sd 363 ft. Brodie, Shearer and Emerich's Shiner 1, Henry Brewer sur, 12 mi se Tilden, sd 2006 ft. Jacob, Buzzini & Pickett's Jacob 1, Southern gas district, W. H. Jacob sur No. 8, near Live Oak line, ru.

MEDINA COUNTY — Frank A. Brown's Jacob Fohn 1, J. F. Tony sur, 8 mi s Hondo, fsh 922 ft. National Oil Co.'s 1, lcn being made.

NUECES COUNTY—Gulf Coast Oil Co.'s Sagarin 1, sec 1V9, Kinney sur, Saxet field, dr 4615 ft, sticky shale; Elder 1, nw Harrel 1, Saxet field, sand 4892-96 ft show oil, set csg, nippling up. Neal-Milton & Kepley Prod. Co.'s Roark 1, 2000 ft nw Saxet Dunn 8, Saxet field, sand 4825-32 ft, show 55 fourbles pure oil on ds test, made sw when dr in, set whipstock 4832 ft. Saxet Oil Co.'s Weil 1, Saxet field, ru. Stanolind O&G Co.'s (Southern Crude Oil Purchasing Co.) Chas. E. Stratton 1, sec 12, Stratton sub, P. Anchow sur, 6 mi s Agua Dulce, sd for orders, td 4765 ft. L. L. Smith's Alexander 1, Saxet field, coring 5246 ft.

REAL COUNTY — Evans and Sprinkle's Haby 1, AB&M sur, 7 mi sw Love 1, sec 175, set 8¼ inch csg 2560 ft, now sd.

REFUGIO COUNTY — Blanco Creek Oil Corp.'s Dammann 1, blk 16, Bonnie View ranch sub, 8 mi s and e Refugio field, sd 4685 ft. Humble O&R Co.'s M. V. O'Conner 1, John Keathing sur, near Victoria line, dr 3855 ft. Larcro Gas & Pet. Co.'s Strauch 4, blk 21, Refugio, dk. Moody-Seagraves Prod. Co.'s Strauch 1, Refugio Blk 9, to work over; St. John 2-A, Refugio sur, dr 3400 ft. United Prod. Corp.'s O'Brien 6, Refugio, sd 6450 ft; W. J. Fox 2-A, Hews and L. Brown sur, Refugio, sand 5186-93 ft, ream down to test.

SAN PATRICIO COUNTY — Atlantic Oil Producing Company's Welder 1-C, on Welder ranch, Blk C, about 10,000 ft sw Aransas gasser, prep to spud. Welder Oil Corp.'s Welder 3, 900 ft ne No. 2, Welder gas field, sand 3647-59 ft, ds test show 1100 lbs pressure in 12 min, sand 3659-63, show 1200 lbs and 1 fourble sw, plug to 3661 ft, w.o.c. Saxet Oil Co.'s Rachal 18, White Point, J. N. Seguin sur, dr 1300 ft.

STARR COUNTY—Los Olmos O&G Co.'s Seabury 1, Porcion 75, testing, 6-inch csg set 366 ft. San Marcos Dev. Co.'s (Lon-Smith Ivy), Kelsey Bass 1, 1 mi sw Olmos pool, sur 8, sub of Porcion 75-76-77, dr below 400 ft, last rept.

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
SABINE PARISH—		
Langbridge Oil Corp., Stephens 1, 17-9-11	40	3626
Lanier & Dyer, Barthold 1, 35-8-12	10	2531
Coates Pet. Co., Sabine B-1, 1-7-12	250	2306
Crescent Drilling Co., Byrd 1 12-7-11	500	2494
Coates Pet. Co., Hale 2, 1-7-13	50	2392
H. W. Perritt, Bowman-Hicks 5, 2-7-12	•	2437
UNION PARISH—		
Don Brooks, Tr., Douglas 1, 9-22-2w	•	3509

BIENVILLE PARISH — Arcadia Drilling Co.'s Mason 1, ne sw 28-18-6w, dk.

BOSSIER PARISH—Andrews & Davlin's Nattin 1, 15.22-14, 4½ cas 2882 ft, sd wo 2890 ft. Dr. Hankins et al's Newell 1, 12-19-11, sd 1255 ft (corrected depth). D. L. Perkins et al's Ardis 1, 13-15-11, top Nacatosh 944 ft, sd 1004 ft.

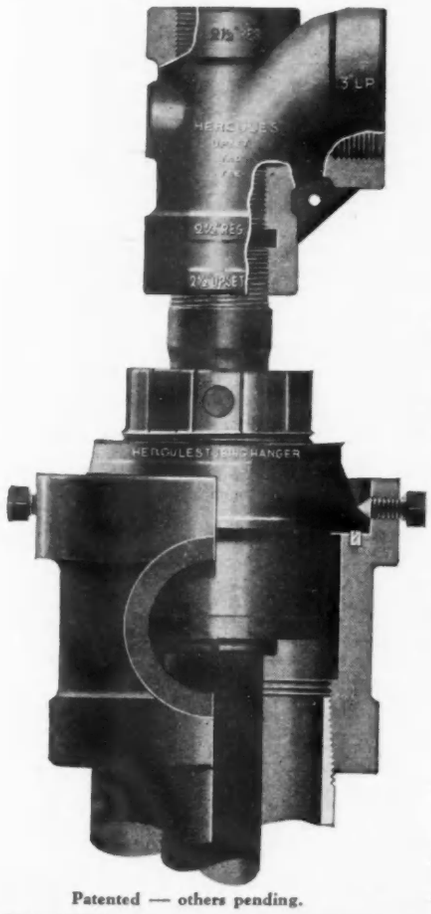
CADDO PARISH—United Gas Pub. Serv. Co.'s H. J. Bussa 1, 33-23-16, 12½ cas 375 ft, 9⅝ cas 3625 ft, dr 4250 ft shale (5500 ft test). Pelican Nat. Gas Co.'s Cooper 1, 29-18-14, ta 3648 ft red shale and lime.

DE SOTO PARISH—Rellitt O&G Co.'s Cannon Hrs. 1, 12-11-16, top chalk 1475 ft, base 1810 ft, 6-inch cas with pckr set at 1470 ft, dry wo, td 1965 ft. Keatchie O&G Co.'s Smith 1, 31-14-15, sd 2350 ft. E. T. Oakes' Johnson 1, 30-13-15, base chalk 2160 ft, top of another chalk 2815 ft, sr to bot, td 3001 ft, chalk. Walters & Nicholson's Jim Guy 1, 3-11-13, sd 1260 ft.

LA SALLE PARISH—Gulf Ref. Co.'s Tremont Lbr. Co. 1, ne sw 10-9-2e, 15½ cas 105 ft, 12½ cas 940 ft, dr black shale and bldrs 4344 ft.

OUACHITA PARISH—S. C. Wilson et al's W. L. Williams 1, sw se 5-16-1e, dk.

SABINE PARISH—Langbridge Oil Corp.'s Stephens 1, se ne 17-9-11, elev 303 ft, 6⅝ cas



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3176 ft, completed flowing 40 bbls 39.1 oil daily through 2-inch tub & pckr, td 3626 ft. J. J. Kean's Belton 1, nw se ne 31-9-13, elev 233 ft, 8-inch cas 1590 ft, sd 2039 ft chalk. H. W. Perritt's Bowman-Hicks 5, 2-7-12, 10-inch 100 ft, 6-inch 2220 ft, dry abn, td 2437 ft chalk; Bowman-Hicks 6, se ne 2-7-12, dk. A. H. Thames' Edwards Est. 1, 8-8-13, sd 1200 ft. R. L. Gay, Tr.'s, Long Bell A-1, nw nw 10-8-13, sd 3853 ft. Coates Pet. Co.'s Bowman-Hicks A-1, sw se 18-7-13, cemtd 6-inch cas 2160 ft; Bowman-Hicks 1, ne sw 2-7-12, oil show in Wilcox 1670 ft, top marl 2230 ft, top chalk 2300 ft, wosr 2441 ft; Sabine B-1, sw nw nw 1-7-12, 10-inch 100 ft, top marl 2237 ft, top bro chalk 2255 ft, top hd chalk 2264 ft, 6-in 2237 ft, pumping 500 bbls fluid daily 50 per cent sw, td 2306 ft; Stille 1, nw se 35-8-13, lcn; Hill 1, se se 35-8-13, lcn; Hale 2, nw sw ne 1-7-13, 10-inch 100 ft, 6-inch at top marl 2097 ft, top chalk 2108 ft, flowing 50 bbls oil daily by heads, td 2392 ft. Dengail Oil Co.'s Nulton 3, sw sw ne 1-7-13, sp 10-inch 103 ft; Nulton D-2, nw ne 1-7-13, lcn. Ohio Oil Co.'s Bowman-Hicks 9, 35-8-12, lcn; Bowman-Hicks 10, 35-8-12, lcn; Bowman-Hicks 11, 2-7-12, lcn; Bowman-Hicks 12, ne ne 2-7-12, 10-inch 221 ft, dr 1500 ft. Diffie & Barrett's Lites 1, 348-11, 10-inch 105 ft, sd. Hudson & Bird's Walden 1, sw ne 26-8-11, 10-inch 100 ft, sd for water 1800 ft. Gehrig Co.'s W. F. Skinner 1, nw nw 16-8-11, 10-inch 105 ft, sd for water. Hawkins & Antoon's Newton 1, 1-7-11, wosr 2160 ft. L. K. McGuffin's Byrd 1, 1-7-11, sd 400 ft. Zeke Lohman's McCormick 1, ne sw 2-7-11, sd 1606 ft. Ben Merritt, Tr.'s, Byrd 2, 1-7-11, 10-inch 88 ft, sd. Roy Baker's Sabine 1, 11-7-12, wosr 2548 ft. Gautier et al's Meshell 1, 30-8-12, wosr 2530 ft. Lanier & Dyer's Barthold 1, 35-8-12, pumping 10 bbls oil day, td 2531 ft chalk. Loring Oil Co.'s Bowman-Hicks 18, sw nw 15-7-12, 15½ cas 100 ft, dr 3970 ft lime. G. M. LeGrand's Peterson 1, sw ne 34-7-13, 10-inch 40 ft, claims 3 ft sand showing oil 2137-40 ft, arr set 6-inch cas. A. F. Tarver's Cutrer 1, 14-7-11, wosr 2550 ft. Crescent Drilling Co.'s Byrd 1, 12-7-11, 10-inch 100 ft, cemtd 6-inch cas 2375 ft, flowing 500 bbls oil day, td 2494 ft chalk. Lyons & Neely's Byrd 3, 1-7-11, 10-inch 100 ft, sd 400 ft. Eddie Self's Jacobs 2, sw se 1-7-11, 10-inch 100 ft, sd for water 1860 ft. Stovall Drilling Co.'s Nulton 2, 1-7-13, 10-inch 100 ft, cemtd 6-inch cas 2059 ft. O. J. Baird's Duggan 1, se nw se 14-7-11, sp 10-inch 100 ft, dr 350 ft. Davidson & Grigsby's Martinez 1, nw se 2-7-13, dk. M. J. Kissick's Brown Lbr. Co. 1, nw ne 1-7-11, sp 10-inch 100 ft, dr 620 ft. Exchange Pet. Co.'s La. Long Leaf 1, ne nw 35-8-11, lcn.

TENSAS PARISH—A. R. Willis' Curry 1, 39-11-12e, sd 3545 ft. L. A. Duvall et al's Martin Jacoby 1, ne ne 1-14-10e, dr 2860 ft shale. Stovall Drilling Co.'s Miller 1, ne sw 18-10-10e, lcn.

UNION PARISH—Don Brooks, Tr.'s, Douglas 1, ne sw 9-22-2w, 12-inch 170 ft, top chalk 2317 ft, top red beds 3079 ft, dry abn, td 3509 ft gumbo.

ARKANSAS

Completions

CHICOT COUNTY—
W. R. Smith, Lytle 1, 31-18-3..... † 2925

CHICOT COUNTY—W. R. Smith's Lytle 1, se nw 31-18-3, junked abn, td 2925 ft.

CLAY COUNTY—S. C. Jeffus, Tr.'s, Underwood 1, 4-20-8e, sd 1260 ft.

CLEBURNE COUNTY—Donnell et al's Fee 1, 33-11-9, sd after testing sw 3515 ft.

CLEVELAND COUNTY — Crum & Stilwell's Bell 1, 10-10s-12w, rigged up and sd.

COLUMBIA COUNTY—Kendall Oil Co.'s Fullenwider & Kitchen 1, ne ne 13-17-22, 8¼ cas 800 ft, bailed down 150 ft from top showed fresh water small show oil, 3 ft sand, sd 814 ft.

CRAWFORD COUNTY — Ozark Nat. Gas Co.'s Hammonds 1, se se 29-10-29, dr 1675 ft.

DALLAS COUNTY—Zepp O&G Co.'s W. E. Hillman 2, se ne 20-10-13, 10-inch 135 ft, 6-inch 2620 ft, in chalk rock, bailed dry, arr deepen, td 2655 ft. Jno. James, Tr.'s, Fordyce Lbr. Co. 1, 11-9s-15w, sd 2520 ft. E. C. Brewer, Tr.'s, Hillman 1, 20-10-13, sd 2869 ft, white sand.

HOT SPRINGS COUNTY—Starr Oil Co.'s Cunningham 1, 11-5-16, 12½ cas 62 ft, sd 1262 ft, shale and bldrs.

JOHNSON COUNTY—Blackwell O&G Co.'s Wyver 1, 21-8-23, ta 5600 ft.

LINCOLN COUNTY—L. B. Cook, Tr.'s, McGehee Pltg. Co. 1, 5-8s-7w, sd 2800 ft.

LITTLE RIVER COUNTY—Geo. Stephens et al's Dierke Lbr. Co. 1, ne nw 29-12s-31w, dk. Fay Roberts Oil Co.'s Russell 1, 25-12-29, lcn.

LOGAN COUNTY—M. W. Greesom's Parks 1, 21-8-24, sd 1369 ft. J. H. Flowers' White 1, 13-5-26, sd 3610 ft.

MILLER COUNTY — W. E. Noel et al's Dickson 1, 11-20-27, sd 1955 ft shale and gumbo. Fitzwater et al's E. L. Beck 1, sw se 33-15-26, 10-inch 85 ft, sd 2220 ft, changing boilers.

OUACHITA COUNTY—W. H. Copenhaver et al's Berg 1, se se 13-15-17, 10-inch 42 ft, sd 532 ft gumbo.

PIKE COUNTY—Henderson et al's Tilyou 1, 26-8-24, ta 2920 ft. Kentucky-Ark. O&G Co., Inc.'s, East 1, 13-9-23, 10-inch 288 ft, hole full fresh water, td 709 ft.

PRAIRIE COUNTY—Powell Creek O&G Co.'s Kloss 1, ne sw 3-4n-6w, partly rigged up and sd.

SCOTT COUNTY — Heavener O&G Co.'s Reser 1, 36-4-26, sd 1536 ft. Waldron O&G Co.'s J. G. White 1, 17-3n-29w, sd 1860 ft (sec. hole).

SEBASTIAN COUNTY—M. W. Greesom's Spears 1, 9-7-29w, sd 1536 ft.

SEVIER COUNTY — Tri-State O&G Co.'s Bank of DeQueen 1, 34-8s-32, rig up.

UNION COUNTY — Southern Prod. Co.'s Wingfield 1, 16-19-15, sd 2608 ft. Lion O. R. Co. et al's Guy P. Hayes A-9, ne ne 4-16-15, elev 96 ft, cored rock salt 5974-80 ft, ds stuck, lub with oil, td 6071 ft in salt (6000 ft test). Drillers Oil & Dev. Co.'s Pickering 1, 1-17-16, cored cap rock and oil sand 2128-34 ft, 1½ ft cap and 4½ ft oil sand, cemtd 6⅝ cas 2128 ft, arr drill plug, td 2134 ft. Joe Modisette et al's Webb 1, nw se 6-18-13, 10-inch 137 ft, dr 1686 ft gumbo.

WASHINGTON COUNTY—Lincoln Lease Holding Synd.'s Townsite 1, 3-15-32, ta 1500 ft. C. H. Willoughby's Jones 1, 34-16-30, sd 2150 ft. O'Hara & Shetterley's Boyd 1, 2-16-32, ta 650 ft. Delbert Graves' Cunningham 1, 14-15-32, sd 602 ft gray sand.

YELL COUNTY—T. Luckett's Balcon 1, 36-7-12, sd 5710 ft.

MISSISSIPPI

CLARKE COUNTY (Quitman Dist.)—Gulf Ref. Co.'s Long Bell Lbr. Co. A-1, sw sw 10-2n-16e, elev 380.3 ft, 15½ cas 105 ft, 10-inch 956 ft, top black shale 2290 ft, top chalk 2633 ft, 7-inch O.D. cas 3685 ft, sand showing saturation heavy oil 3692-3700 ft, Eutaw, arr dr in, td 3700 ft in brown and green sand.

CHICKASAW COUNTY — Hightower & Golson's Fleming 1, 20-13n-3e, sd 1640 ft.

HUMPHREYS COUNTY—Danciger O&R Co.'s Bellgrade Lbr. Co. 1, nw nw 29-14n-4w, 10-inch 659 ft, dr 2480 ft, gray sandy shale.

JASPER COUNTY (Bay Springs Dist.)—Bay Springs Pet., Inc.'s, J. H. Keyes 1, nw ne 2-2n-10e, sd 2360 ft, Wilcox.

LAMAR COUNTY (Purvis Dist.)—Stauffer & Kouri, Tr.'s, Bond 1, se ne 18-2n-14w, dk.

LOWNDES COUNTY — Lowndes County O&G Co.'s Carr Est. 1 (formerly carried Fee 1) 34-17-16e, dk.

MONROE COUNTY (Amory Dist.)—Amory Dev. Co.'s Bourland 1, 2-15-19, ta in brown sand 3007 ft. P. J. McAlpine's Cowart 1, 2-12s-19w, 5 3/16 cas 3420 ft, dr 3680 ft brown lime. Associated Royalties' School Board 1, sw se 16-15-17, ta 60 ft.

NEWTON COUNTY (Newton Dist.)—Dalton Dev. Co.'s Majure 1, se se 25-6n-11e, 10-in 295 ft, sd 847 ft.

NOXUBEE COUNTY (Macon Dist.)—Thompson O&G Synd.'s Donahue 1, se ne 25-16n-17e, elev 280 ft, 12½ cas 20 ft, 8¼ cas 1605 ft, dr to 1735 ft, 130 ft open hole, arr bail; Ames 1, nw nw 24-16-18e, dk pat.

RANKIN COUNTY (Jackson Dist.)—Gulf Ref. Co.'s Hanna A-1, nw se 23-5n-1e, 9-inch cas cemtd, 9-in cas 2565 ft, chalk. Atkisson & Dyer's Valentour 1, 18-5-2e, 12½ cas 60 ft, sd 1198 ft. United Gas Pub. Serv. Co.'s McLaurin A-1, ne sw 8-5-2e, elev 284 ft, 12½ cas 105 ft, 9-inch cas 854 ft, top Wilcox 1219 ft, top chalk 2513 ft, tested sw several times at top chalk, tested dry thr ds 2600-2622 ft, dr 2844 ft, chalk. Majestic O&G Co.'s Elton Lbr. Co. 1, 10-4n-3e, dk.

SCOTT COUNTY—Culley et al's Owen 1, 2-8n-9e, dk.

WARREN COUNTY (Vicksburg Dist.)—Eagle Lake O&G Co.'s Kiger 1, sw ne 9-18-2e, se 2607 ft. United Gas Pub. Serv. Co.'s Tchula Store 1, sw se 33-115n-3e, elev 83.8 ft, 15½ cas 184 ft, 10-inch 855 ft, top Claiborne 725 ft, coring 2992 ft.

WEBSTER COUNTY—P. J. Alpine's Henley 1, se nw 15-21-11e, cored gravel, sd 1800 ft.

WINSTON COUNTY—Miss. Drilling Co.'s Scarbrough 1, nw nw 15-13-14e, dr 4041 ft red gumbo.

ALABAMA

MADISON COUNTY—Tennessee Valley O &G Co.'s Fee 4, 1-4s-2e, no report.

SUMTER COUNTY (Livingston Dist.)—Forked Lightning O&G Co.'s Nixon 1, 30-20-2w, dk.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, arr change to rotary, td 925 ft Wilcox; Hobson 1, 9-8-2w, ta 1450 ft. Oscar Brown U. S. Land & Cotton 2, 25-3-2w, ta 700 ft.

TENNESSEE

CHESTER COUNTY—Gilmore et al's Scott 1, sp.

DECATUR COUNTY—Chester County O& G Co.'s Montgomery 1, sd 2511 ft (2500 ft contract depth).

COLORADO

ADAMS—Hills Dome Lease Dev. Co., se 27-38-64w, circul to lower 6⅝-inch to 3740 ft.

ARAPAHOE—McDeb. Drlg. Co., Fitzsimons 1, ne 7-4n-68w, stand 5785 ft.

BOULDER—C. T. Ahlstrand's Woodley 1, ne 8-3n-70, prep to set pipe at 485 ft. Julius Williams 6-1n-71w, dr 150 ft, last report. Independent O&R Co., Blair-Winter 1, nw 25-3n-71, gas show 185 ft.

EL PASO—Gulf States Oil Corp., Canon 1, ne 10-16s-66w, prep to res at 1025 ft.

GRAND—Oil Mineral Lands, Inc., McElroy 1, sw 14-2-81w, stand 545 ft.

JEFFERSON—Ruby Hill O&G Co.'s Braden 1, se 24-4s-59w, run 6⅝-inch at 4100 ft.

LA PLATA—McGarr Pete Co.'s Pinon Mesa 1, ne 34-33n-12, rig up. Klem Pete Corp.'s Olbert 1, se 9-26n-12w, stand 3125 ft. J. W. Irwin & Co., Doescher 1, nw 29-33n-12, coring 3135 ft.

LARIMER—Mayer Oil Co., No. 1 Reed, nw 28-4n-69, prep to res at 2400 ft. P. J. Mosher, Inc., sw se 17-4n-69w, dr 740 ft. Colorado Producers, Inc., Foster-Motz Reservoir 1, se se 17-4n-69, dr 1000 ft. Consolidated Drlg. Co.'s Maxwell 1-A, ne ne 25-8n-70, pulled 12½-inch and rerun. Stanley M. Barrows' Munroe 1, nw ne 26-11n-69, to res at 1050 ft.

LINCOLN—Eastern Colo. Oil Corp.'s State 1, 36-14n-57w, fsh 3425 ft.

MOFFAT—Ohio Oil Co., Craig structure, spotting location.

MORGAN—Ind. Terr. Illum. Oil Co., State 1, ne 16-1n-57w, milling on iron 5662 ft, td 5920 ft. Independent O&R Co., Schmidt 1, nw 19-6n-60w, rig. Badger Creek O&G Co., sw 2-2n-57w, dr 1300 ft. Colo. Ass. Oil Co.'s Pumphrey 1, se 14-4n-58w, coring 5845 ft. Tulsa-Fort Morgan Oil Co., Smith 1, nw 18-6n-60w, location. Prairie O&G Co., Mortier 1, nw 2-5n-60w, rerun 9⅝-inch at 5290 ft. Juhan et al, Kent 1, sw 2-2n-57w, co 1214 ft to run cas. Myers et al, Lee & Lusby 1, sw 6-2n-56z, bldg foundations.

PARK—So. Park Oil Co.'s Milligan 1, se 13-8s-76w, co and run cas 2605 ft. So Park O&G Co.'s Easche 1, ne 8-5s-76w, sd 2465 ft for cas.

PUEBLO—Anchor Oil Co., Esely 1, sw 35-22-67, dr 788 ft.

RIO BLANCO—California Co.'s Raven 1, se 20-2n-102, dr 2859 ft. Magnolia Pete Co.'s Maddock 1, 9-2s-96w, dr 1675 ft.

ROUTT—Mid-Colo. Pete Corp., Omholt 1, ne 29-4n-87w, dr 680 ft last report.

WASHINGTON—Frank E. Kistler's Middlemist 1, se 14-4-56, stand 1510 ft to res in spring.

WELD—Reiter-Foster's Johnson-Juhl 1, 14-6n-61w, dr in below 6640 ft. Reiter-Foster's Wilson 1, se 24-6n-61w, spd 135 ft. Aztec Corp., State 1, se 16-6n-61w, 15½-inch cem 115 ft. Retter Oil Co., Smith 1, 14-1n-68w, wait for die at 1377 ft. Conoco, Gadbois 1, sw 24-

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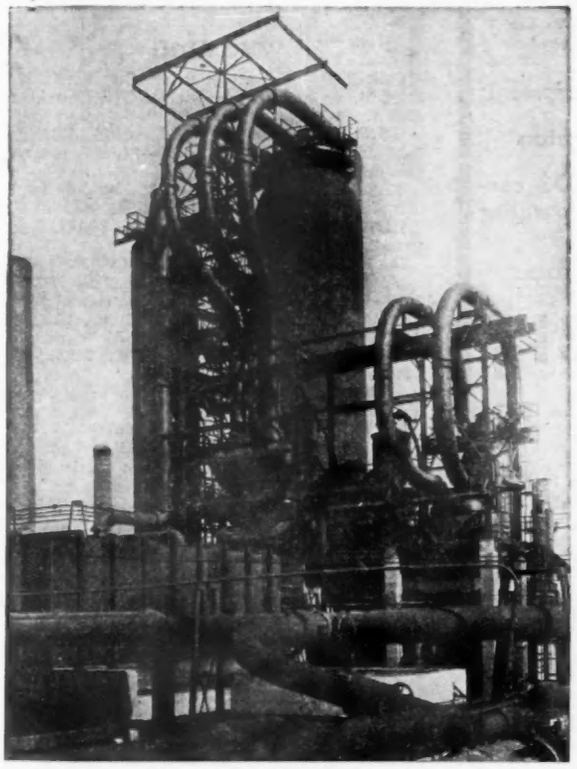

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6n-61w, fsh, td 6593 ft. Greeley Oil Co., Gadbois 1, 1-B, nw 25-6n-61w, cem 5550 ft. Gulf States Oil Corp., Bengston 1, nw 6-4n-63, lcn. Platte Valley Petroleum Co., Niles 1, 13-6n-61, cellar. Prairie O&G Co.'s O'Toole 1, ne 33-7n-62w, bldg rig.

MONTANA

CARBON—Corbett Roy. Co., sw se 1-6s-23e, dr bel 450 ft. Jack Creek Oil Co., 1, se 15-7s-23e, free oil and gas show 1255 ft, dr 1260 ft.

CASCADE—Buscher & Cassady, Johnson 1, se 19-22-3e, fsh tools 1010 ft. Charles Merz et al, Sheffelt 1, sw 4-21-4e, dr 300 ft.

CHOTEAU — Williston-Shelby O&G Co., Flack 1, se 12-28-11e, sd 2867 ft, title troubles.

GLACIER—Fulton Pete Corp.'s Blackfeet 1, ne 28-38-12w, dr 2710 ft. Browning Dev. Co.'s Reickhoff 1, ne 3-34-6w, rigged. R. C. Tarrant et al, Haglund 1, sw 13-34-6w, dr 1400 ft.

GOLDEN VALLEY—Golden Valley Oil Co., 28-6n-22, to res 1140 ft.

LIBERTY—Peoples O&G Co., First Nat'l Bank 1, ne 17-36-6, dr 2000 ft. California Co.'s Utopia 1, s 11-33-6e, run liner, td 3265 ft. Northland O&G Corp., Yurman 1, sw 32-33-5e, sd 3705 ft, wait for new dr line.

ROSEBUD—Prairie O&G Co., 1-XX, 26-10-39e, dr 4285 ft.

SWEETGRASS—Shoshone Cons., nw 23-2n-15e, straightreaming bel 5360 ft to cem at 5792 ft.

TETON—Andover Oil Co.'s Carlson 1, 5-24-4w, stand 150 ft. California Co.'s Sullivan 1, nw 34-27-7w, dr 2250 ft. Earl Oil Corp., Gad 1, se 22-22-8w, td 3730 ft.

TOOLE—Liquid Gold Oil Co.'s Elbert 1, ne 25-36-12, to run 5-inch to s.o.w. 2480 ft. Oregon Oil Synd., se 20-36-2e, dr 1550 ft, carry cas.

YELLOWSTONE—Pan American Oil Synd., 23-2s-24e, cem 8¼-inch, td 2095 ft. Peter Antonioli 1, ne ne 21-2n-25e, dr 2150 ft, 10-inch hole.

WYOMING

CARBON—Midwest Refining Co., U. P. 27, 27-11-81, dr 4025 ft. Prairie O&G Co., Bunker Hill 1, 29-27-87, dr 5847 ft.

CONVERSE—John Ackard, se 24-33-72, dr 1685 ft. Otto Olston 1, 1-32-74, sd for refinancing.

FREMONT—Wiebolt et al, 35-33-99, dd from 1850 ft. Ward O&G Co., 28-34-90, dr 2510 ft.

LINCOLN—Wyo. Prod. Co., 14-24-113, bottomed at 1700 ft.

NATRONA — Midwest's 11, nw 32-34n-77, stand 5340 ft. Midwest's Midway 1, ne 23-35n-79w, ripping 7-inch to plug back to second Wall Creek. Summit Oil Co., 21-33-80, ur, td 1400 ft. Wyo. Imperial Oil Co., se 13-33-79, rig up.

NIOBRARA—Globe Pete Corp., 2-39-6, td 248 ft, last report.

SHERIDAN—R. & D. Oil Co., se 21-57-87, dr 1230 ft.

SWEETWATER—Vermillion O&G Co., sw sw 16-12n-99w, ur 8¼-inch at 4685 ft.

WASHAKIE—Ohio Oil Co., lot 14, 19-45-92, dr 8049 ft, headed for the Muddy.

WESTON—LeFaivre Oil Synd., se 29-45n-68w, td 1400 ft. Julius Peters et al, Witzell 1, se nw 30-46-64, dr 2885 ft. Stockade Anticline Synd., 32-45-60, dr 800 ft. Gose Oil Synd., Gose 1, 28-47-65, dr 5029 ft.

NEW MEXICO

BERNALILLO — Norrins Realty, Pajarito Grant, 22-9n-2e, dr 825 ft.

DE BACA—Saldo Dome Oil Corp., sw 6-4n-20e, resum 3189 ft. Landowners Oil Co., State 1, ne 16-1s-27e, cem at 4618 ft.

EDDY—Western Drlg. Co., nw 29-17-29, dr 100 ft in red beds.

DONA ANA—Viking O. & Dev. Co. 1, nw 26-23-5e, fsh 3065 ft.

GUADALUPE—N. M. Prod. & Ref. Co., McMillan 1, 24-5n-16e, dr 2600 ft.

LEA—Pacific Coast Oil Co., Blakey 1, nw 28-19-38, mvg in, dr water well.

LUNA—Angelus Oil Mining Ass'n 1, se 20-21s-10e, co 6171 ft.

OTERO—Ernest et al's se 20-26s-7e, fsh tools 1251 ft. Pasotero Oil Corp., Evans 1, sw 22-24s-12e, stand 1375 ft.

RIO ARRIBA—Berrenger et al's Hartman 1, ne 8-29n-7w, sd 825 ft. San Juan Pete Co.'s Gov't 1, se 14-30n-7w, stand 380 ft. Governador Oil Co.'s 1, 12-29n-7w, dr 1775 ft.

ROOSEVELT—Peterson et al, Good 1, ne 32-5s-30e, ready to spud.

SAN JUAN—Kutz Canon O&G Co., Day 1, se 20-28n-10w, wait for cas, 3635 ft. Rio Grande Dev. Co.'s 2, 9-29-11, ur cas 1771 ft. Continental Oil Co.'s Rattlesnake 24, 1-29n-19w, mixing mud, td 6035 ft. San Juan Leaseholds, Bowman 3, ne 30-30-15, sd 2685 ft. R. C. Oswell et al., nw 34-30n-11w, show at 1414 ft. Wms. et al, Stallings 1, sw 17-25n-15w, stand 150 ft. Ortega et al, Westwater 2, ne 24-31n-18w, co 2190 ft, td 2460 ft. Dorothy Oil Co.'s Terwilliger 2, se 29-30-9, sd 1750 ft.

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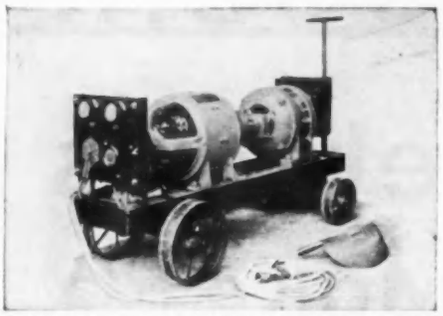

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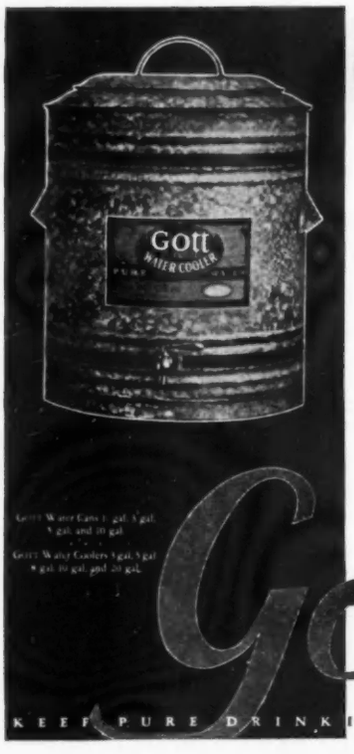

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KANSAS

SUMNER COUNTY—Spencer et al, Porter 1, ne sw, 12-23-4w, 6-inch 3718 ft, dr 4045 ft.

FORD COUNTY—Carter et al, Community-Everett 18, c ne, 22-20-21w, td 6206 ft D&A.

KINGMAN COUNTY—Panhandle Drlg. Co., Wetherall 1, c se nw sw, 20-28s-10w, rig.

STAFFORD COUNTY — Rosenthal, Stanolind, Amerada, Gray 1, c ne, 11-34-13w, sd 3560 ft.

HARVEY COUNTY—Liggett et al, Davis 1, c sw se ne, 7-24-1e, sd 1505 ft.

FINNEY COUNTY — National Ref. Co., Wells 1, sw c 13-23-30w, sd 1610 ft.

HARVEY COUNTY — J. P. Flannigan, Sheridan 1, c sw, 32-22-1e, sil. 1. 3606 ft, dr 3760 ft.

BARTON COUNTY—McCool et al, Isern 1, c sw se n east, 12-20-11w, td 3315 ft, pulling big pipe. Skelton Oil, Ott 1, c se se, 16-19-14w, td 3150 ft, sd for 6-inch. Syndicate Oil Boertz 1, c nw se ne, 13-18-12w, 6-inch 2605 ft, dr 2850 ft.

CHASE COUNTY—Borden et al, Atkinson 1, nw se, 18-18-7e, spd and sd.

MORRIS COUNTY—Allender et al, Wycoff 1, c sw se, 5-17-7e, sd 105 ft. Urschel et al, Bersuch 1, c nw se nw, 10-17-7e, td 915 ft, fsh bit.

ELLSWORTH COUNTY—Keys et al, Gregory 1, sw c 23-17-9w, 3590-2610 ft, hfw, sd.

MORRIS COUNTY—Hankenson et al, Cessnum 1, sw se, 24-17-9e, sd 2625 ft.

OSAGE COUNTY—Riggs-Smith, Wood 1, c se nw, 31-14-15e, 10-inch 1050 ft, sd.

RUSSELL COUNTY — Twin Mounds Oil, Weis 1, c w½ ne nw, 30-13-4w (owd) td 2710 ft dr by 8-inch.

DICKINSON COUNTY—Severs et al, Livingood 1, ne sw, 13-13-2e, sd 4546 ft.

CLAY COUNTY—Nebraska Oil, Tivier 1, sw c, 19-8-9e, sd 2700 ft.

SHERIDAN COUNTY — Flo et al, Shoemaker 1, se sw sw, 27-27-26w, 3425-35 ft, hfw sd 3495 ft.

WASHINGTON COUNTY — Sincox, Penwell 1, nw se nw, 16-3-3e, sd 1720 ft.

RAWLINS COUNTY—Danciger et al, Unknown 1, sw c, 3-2-35w, sd 3925 ft.

OKLAHOMA

ALFALFA COUNTY—T 27n, R 11w, Sec. 12, Smith Bros., Forbes 1, ne c se nw nw, sd 1420 ft.

KAY COUNTY—T 27n, R 2e, Sec. 9, Mummer et al, Sornick 1, nw c se, hfw 2070-2170 ft, sd 3693 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden, Collmer 2, ne c se ne sw, sd 5640 ft, tools in hole.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, J. V. Bailey et al, Acre 1, c sw ne, sd 5502 ft.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer, White 1, se c nw, sd 5850 ft, fsg job.

BLAINE COUNTY—T 19n, R 10w, Sec. 13, Washoma Pet. Co., Phillips 1, c nw sw, td 5120 ft, to abandon.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Healey et al, Quier 1, se c sw, sd 3970 ft.

PAWNEE COUNTY—T 23n, R 5e, Sec. 15, Cochran et al, McFadden 1, ne c sw, rig. T 20n, R 5e, Sec. 6, W. A. Rooksteel, Berry 1, nw c ne sw, show gas 1942-1951 ft, sd.

LINCOLN COUNTY—T 14n, R 3e, Sec. 2, Phillips et al, Phillips 1, sw c nw, dr 2830 ft.

CREEK COUNTY—T 14n, R 7e, Sec. 18, Cal Cul Oil Co., Holleyman 1, se c ne se, spd & sd.

OKFUSKEE COUNTY—T 12n, R 10e, Sec. 3, Shepperd et al, Shepperd 1, sw nw sw, sd 3690 ft.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al, McDuff 1, sw nw se, dr 5801 ft. T 7n, R 14e, Sec. 34, Tape Oil Co., Fulton 1, se c, sd 1200 ft.

LATIMER COUNTY—T 6n, R 19e, Sec. 16,

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P. English et al, Weaver 1, c nw se, sd 1542 ft.

ATOKA COUNTY—T 1n, R 13e, Sec. 31, T. J. Campbell et al, Baird 1, nw ne sw, machine. T 1n, R 15e, Sec. 6, Edgerton et al, Rolland 2, sw ne sw, machine.

OKLAHOMA COUNTY—T 12n, R 4w, Sec. 17, C. F. Cuniff, Trustee, St. Joseph 1, sw c ne sw se, sd 6700 ft.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 19, Bunte et al, Bruner 1, se c nw, rig.

ROGER MILLS COUNTY—T 12n, R 24w, Sec. 23, Ute Oil Co. et al, Williams 1, c sw, sd 5150 ft. T 11n, R 26w, Sec. 4, Rook & Palmer, Davis 1, c nw ne (owd), sd 3240 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey et al, Robinson 1, c ne nw, sd 150 ft.

WASHITA COUNTY—T 8n, R 19w, Sec. 29, Cooper & Terhune, Blocker 1, nw c, dr 2535 ft. T 8n, 19w, Sec. 21, Burns & Prince, Dock 1, sw c, sd 1106 ft.

GREER COUNTY—T 7n, R 22w, Sec. 1, Good & Dowell, Cliffel 1, nw c, sd 1745 ft. T 7n, R 21w, Sec. 23, H. A. French et al, Murphy 1, sw nw se, sd 1654 ft.

COMANCHE COUNTY—T 4n, R 12w, Sec. 33, Snodgrass et al, Willetts 1, ne c nw, sd 190 ft.

GARVIN COUNTY—T 2n, R 2w, Sec. 24, Malernee, Phillips 1, ne c sw, sd 4800 ft.

MURRAY COUNTY—T 1n, R 2e, Sec. 6, Capital P&R, Cutchall 1, se c ne, sd 2432 ft.

COAL COUNTY—T 1n, R 8e, Sec. 35, W. E. McCraw, Stiring 1, ne c se, sd 1846 ft. T 1s, R 8e, Sec. 2, Rabiel Oil Co., Richardson 1, ne c nw, sd 920 ft.

ATOKA COUNTY—T 3s, R 10e, Sec. 18, Brookshire et al, Quinn 1, nw c, sd 1540 ft.

LOVE COUNTY—T 6s, R 2e, Sec. 24, Batson et al, Cross 1, ne c nw ne, sd 1632 ft.

BRYAN COUNTY—T 7s, R 10e, Sec. 8, Bryan Oil Co., Childs 1, ne se sw, sd 660 ft.

SOUTHERN CALIFORNIA

ALHAMBRA—Yellowstone Oil Co.'s Huntington 1, 24-1-13, sd 3919 ft; Construccio 1, 19-1-12, plugged to 1635 ft, td 2014 ft, fsh for drill pipe.

CALABASSAS—L. W. Rucker's No. 1, 26-1-17, co 635 ft. Simi Oil Co.'s No. 1, 18-1-17, dr sandy shale 2915 ft.

LOMITA—Higgins Brothers' Hamlin 1, sd 4781 ft.

MONTEBELLO — Wardell and Menichini's No. 1, 7-2-11, new lcn.

MONTEREY PARK—Celito Oil Co., Jepson 1, 25-1-12, swabbed water and small amount of oil, td 5217 ft.

NEWHALL—O. C. O. Oil Co.'s Wilmon 1, sd 995 ft.

NEWPORT—Ajax Pet. Co.'s B. G. 1, 16-6-10, dr shale 5626 ft. Nuoil Co.'s Gessell 1, 29-6-10, sd 1370 ft. Superior's Irvine 1, 27-6-10, dr hard sand 2995 ft.

OCEAN PARK—Hines Pet. Corp.'s Happy Days 1, 8-2-16, 6⅝-in cas cmt 6048 ft, td 7330 ft, drill pipe recovered.

PLAYA DEL REY — Cooperative Development Co.'s No. 1, 26-2-15, rigging rotary.

PUENTE—Eldorado Oil Co.'s Baird 1, 30-2-9, dr hard sand 2120 ft.

ROSEMEAD—Rancho Oil Corp.'s Harmon 1, 30-1-11, may deepen from 5975 ft.

SAN FERNANDO — El Cabellero Estates' No. 1, 6-2-16, dr shale 622 ft.

SUNSET BEACH — Vaqueros Major Oil Co.'s Tideland 194-2, validating.

NORTHERN CALIFORNIA

KERN COUNTY

ANTELOPE PLAINS — Meridian Oil Co.'s No. 1, 11-9-15, dr hard sand 3910 ft.

BLACKWELL'S CORNER—Signal Oil and Gas Co.'s Lincoln 1, 15-26-19, lcn.

BUTTONWILLOW — Graham-Loftus Oil Co.'s Carmel 1, 20-27-22, dr shale 3715 ft. Milham Exploration Co.'s Crites 1, 8-28-23, will plug back from 3527 ft, showed water and gas.

DEVIL'S DEN—Cumberland Oil Co.'s Cumberland 2, 17-26-18, sd 2838 ft.

LOST HILLS—General Pet.'s No. 1, 13-26-20, sdtr drill pipe at 3650 ft, td 4399 ft, will redrill. Lincoln Pet. Co.'s Theta 1A, 12-26-20, 4¾-in cas re-cmt under pressure at 5229 ft, td 5328 ft, gas cut cement.

McKITTRICK — California Oil Producers' No. 2, 30-30-22, sd 6660 ft.

WEED PATCH—Osborn and Colter's Duff 2, 15-30-29, pumping 14 gravity oil, td 1952 ft.

SANTA BARBARA COUNTY

GOLETA — General Pet.'s More 3, 22-4-28, plugged to 6625 ft, td 6912 ft, sd. Ohio's Oakley 1, 16-4-28, gas showings 4780 ft, swabbing on preliminary test.

SANTA MARIA—Western Gulf's Bradley 1, 5-9-33, dr brown shale 7840 ft.

VENTURA COUNTY

CONEJO—Triunfo Oil Co.'s No. 1, 24-1-19, sd 2487 ft.

HOPPER CANYON — Bardeen Oil Co.'s Lankershin 1B, 13-4-19, pumping 100 bbls. 29.6 gravity oil, td 1799 ft.

OXNARD—Magu Syn.'s Utt 1. 17-1-21, dr 5230 ft.

RINCON — Chanslor-Canfield Midway Oil Co.'s Hobson A2, 23-3-24, placed on pump above plug at 7825 ft, making 140 bbls, 18 gravity oil, td 10,030 ft. Continental's Grubb 1, 23-3-24, fsh for liner, td 6644 ft.

SANTA PAULA — San Pedro-Pt. Fermin's Kellerman 1, 13-4-21, dr shale 3550 ft.

SOUTH MOUNTAIN—H. H. Bell's Lemon 1, 22-3-21, dr shale 900 ft.

MISCELLANEOUS

FRESNO COUNTY—Kingsburg Exploration Co.'s Muller 1, 30-16-23, rig completed.

KINGS COUNTY — Knudsen and Schmidt's Avenal 1, 36-23-17, drilling out cmt 4304 ft. Eagle Oil and Gas Co.'s No. 1, 15-23-20, dr 300 ft. Lacal Natural Gas Co.'s No. 1, 32-22-20, rigging rotary. Valley Exploration Co.'s Dudley 1, 12-23-19, rigging to redrill, td 1287 ft; Veco 7-12, 12-23-19, 8¼-in cas cmt 1050 ft, td 1080 ft.

MENDOCINO COUNTY — Twin State Oil Co.'s Soldani 1, 14-12-17, fsh for drill pipe 7694 ft.

MONTEREY COUNTY—Pacific Inland Oil Co.'s No. 1A 19-23-15, dr shale 1930 ft.

SAN LUIS OBISPO COUNTY — Central Coast Investment Co.'s No. 1, 1-28-12, dr shale 935 ft. Emerick Oil Corp.'s No. 1, 13-28-12, lcn. Kent and McDonald's No. 1, 3-32-22, dr shale 2222 ft.

TULARE COUNTY—Tulaco Oil Co.'s No. 1, 17-22-22, lcn. W. A. Campbell's No. 2, 22-22-27, lcn. C. E. Pettingill's No. 1, lcn. Ellis and Sanford's No. 1, 20-24-33, dr shale 1900 ft.

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▼ ▼ ▼

My dear Cleopatra:

Well Cleo honey I told you nearly right last week about what was going to happen about the soldiers suit which was going to be held at Beaumont only it was a little different on account of both sides was off-side on the kick off and now they is going to wait until next year to do anything about it. In the meantime the soldiers is going to stay where they are at and I will not have to start no riot to keep East Texas quiet, so that still leaves me kinder unemployed for the time being. But things is looking up some and ought to be pretty good before long. Now that President Hoover has got so many people working on committees for the unemployed and the red cross and community chests is making their drives, about all of the unemployed is working on some kind of a committee, which if it aint doing nothing else is keeping them quiet, and in the meantime things is getting better. Maybe it is because some of the big fellows which think it looks like they are going to have to give too much to the relief funds have decided that it would be better to just pay wages. And in place of making all calculations on the rise and fall of the stock market the economists are beginning to figure more on the prices of stuff like cotton and corn, and even oil is going up.

But if I was a economist, honey, what would have me worried is what is the matter with the oil business. I wonder if all them big companies is as hard up as they make out and if they are if they still think they are smart. Well the price is down alright but it is their own fault because people want gasoline even if they have to pay as much for it as the tax on it, but crude is down and pipe is down and every thing else is down, so it seems to me that them what buys oil cheap and also sells it cheap ought to make as much money as when they buy it high and sell it high, and it also seems like to me that a fellow which used to could get rich drilling 4500 feet for a hundred barrel well to sell oil at $1 could get along alright if he could get 30 cents a barrel for oil from a 1000 barrel well which is around 3500 feet deep. Even if his well is held back to 150 barrels per day and he gets 68 cents for it he gets more than he used to get rich on at $1 a barrel, and I guess some of them seems to be waking up about that, which is the reason it is only a few left which is kicking about the soldiers in East Texas and most of them which is kicking is people which it aint none of their business and just dont want anything run by soldiers, which is against the constitution maybe but in favor of better times and more gross production tax, and the oil business can stand a whole lot of the first and Texas and Oklahoma will not be hurt by the last.

And now some of the boys has got together to figure out a scheme of keeping East Texas kinder where you can know where it is at by saying how much will come by the acre rather than by the well. The boys is giving the railroad commission and the governor a whole lot of room to work around in in defining what is conservation of gas energy and economic waste without reference to market demand, but if four barrels a acre is right well it aint nobody can dispute with them because after all us geologists and engineers get through with our deducts it aint nothing really concrete about a oil well except what they set the casing in.

And just to prove that you cant tell nothing about it, up in Oklahoma they are trying for a rise in the price of crude only at this writing I have only seen where some of the buyers is offering 15 cents more for good oil but they are not the heavy ones so I dont know if the smaller boys is as good on fixing the price as they is on deciding how proration will be run like they do down in Texas. But the funny part about that to me is that the price would not go up in Oklahoma while the governor had his soldiers saying it must, but soon as Alfalfa Bill gets going on keeping the bridges open again well the price starts up.

It is a lot of people saying that right now aint no time to raise the price on account of it being the off season and you can't raise the tank wagon on gasoline in the fall. Well honey I think they is wrong there because in the fall and winter you do not sell so much and the less you sell well the more it costs to sell it and by rights it ought to go up. And by the same rule it is a whole lot more trouble to produce oil when it is raining and cold than it is in the time of the year when the only thing you dont like about staying on the job is that you want to go fishing.

I guess you seen in the papers where New Jersey and California is still trying to make a deal on a consolidation but it is being held up on account of neither one is real sure about how many filling stations they have got and has got detectives working up and down both coasts to make sure that they are all included when Walter and Kenneth set down for the finally on it. The way I know they are using detectives is on account of something which happened here halloween night when some detectives was fooling around a filling station here in Houston about two o'clock in the morning to see if it was a Humble station or was just selling Sacony-Vacuum oil for a kinder of a blind, and run into a bear which the station was using for a side show or something on account of they think when they have three grades of gasoline and their courtesy card idea they ought to have something to make the kids laugh too. So anyway the bear got out and it was just too bad for the bear and also it was too bad if John Bonner had caught that bear with the idea of taking Walter Teagle bear hunting up in East Texas this winter, because the bear now aint even fit for a rug.

But that does not clear up one bad situation here in Texas where both the California company and the New Jersey company has got some interests and the boys in them does not know who they will be working for tomorrow like I seen Jimmy Charlton down here in Houston on some kind of a mission for The California Company and he did not know if he should take off his hat when he passed the Humble building or not. But anyway he whistled right soft everytime he seen a Humble executive.

Well honey the next big thing on tap is the API meeting at Chicago. I might decide at the last minute to go up there if somebody asks me to go in a airplane, but if I do not go well I will be getting some dope from up there from some of the boys which is more flush on railroad fare than I am and I will tell you all about it. Then after that we will be having some more about the tariff which it is still some say she do and some say she dont and both sides has got enough arguments to make a whole lot of noise, which they will proceed to do. Personally I believe that by the time the oil business gets through selling an administration that has a commission to conserve national oil resources on the idea of a tariff on oil they will be good enough salesmen to sell some oil, and then the tariff wont mater so much.

Yours,

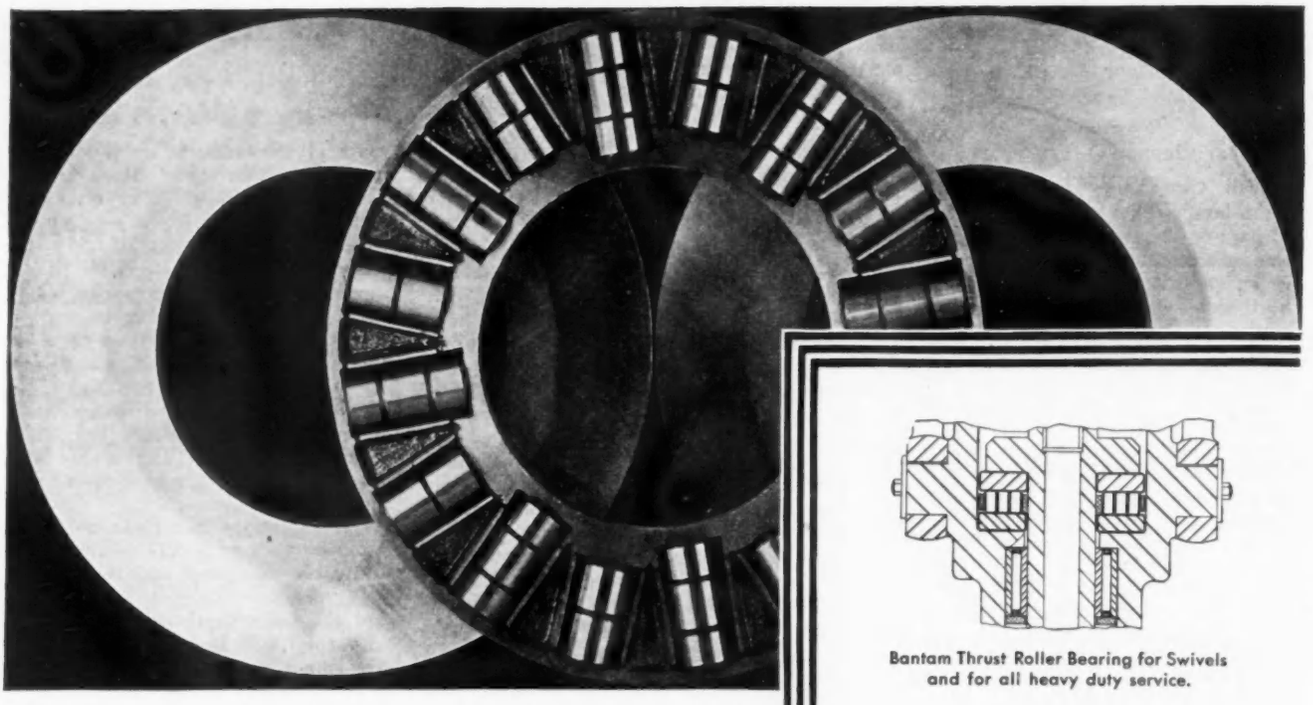
PAUL.

P. S. Since I written this I have saw another paper and it seems like maybe it is really a rise in the price, even in East Texas with Magnolia taking the lead. I also heard over the radio that wheat took another rise and already cotton is going up and it looks pretty much like good times all around. Good times and bad times is all the same to me on account of I get by, but I'm glad of it if it helps anybody else and will stop them from bellyaking.

Yours lovingly,

PAUL.

BEARING SPECIALISTS FOR 32 YEARS



The above Bantam roller thrust bearing for swivels measures 16⅞" outside diameter. See drawing at right.

BANTAM Rollers Do Not Break

There is no finer heat treating equipment in the world than that used in the manufacture of Bantam bearings. Modern electric furnaces—self recording and automatically controlled—plus our 32 years' experience in meeting industry's most difficult bearing problems, contribute to Bantam's achievement of ***rollers that do not break.*** There is a Bantam bearing for every type of heavy duty equipment in the oil field.

Write for full details—also for the Bantam Ball and Roller Bearing Manual, which contains the first series ever published of standard sizes of bearings for heavy duty service.

THE BANTAM BALL BEARING CO.

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Bantam Thrust Roller Bearing for Swivels and for all heavy duty service.

Bantam Journal Roller Bearing for use on Swivel Stem to take side thrust or radial load (Unretouched photo).

Bantam Thrust Ball Bearing for valves and other oil field equipment (Unretouched photo).

ONE OR A MILLION • ½" TO 48"

New Equipment for the Field

MACHINERY - TOOLS CATALOGS - BOOKS

▼ ▼ ▼

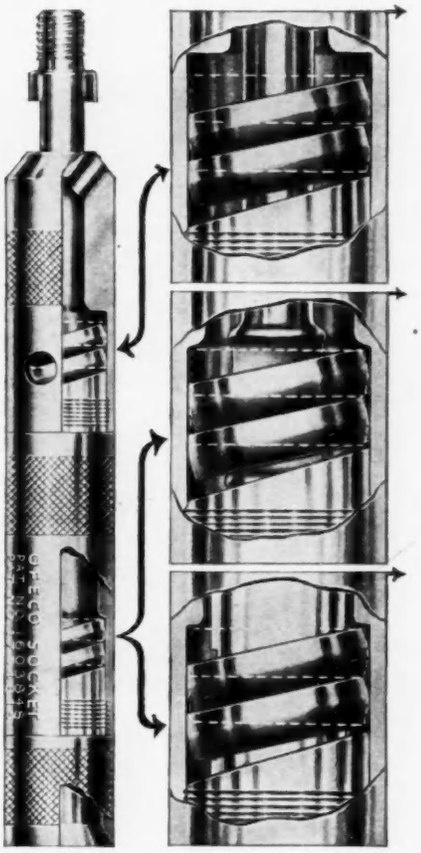
Combination Sucker Rod Socket

OIL FIELD ENGINEERING CORPORATION

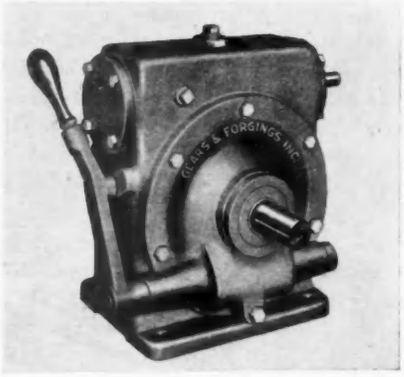
Oil Field Engineering Corporation, Fort Worth, announces a new combination sucker rod socket designed for effective operation under all conditions, especially in fishing out rods which have worn down from their original size.

The design of the "Ofeco" socket is such, the manufacturers claim, that no pressure is exerted on the sides of the shell; consequently, there is no possibility of splitting the bowl. The socket is machined from a solid bar of special alloy steel and is electrically treated for extreme strength. The rings are machined from electrically heat treated tool steel. They have a hard surface with a soft core to resist shocks without breaking.

Complete information on the "Ofeco" combination rod socket may be obtained by writing Oil Field Engineering Corporation, P. O. Box 414, Fort Worth, Texas.



"Ofeco" Rod Socket



Two-Speed Worm Gear Reducer

Two-Speed Worm Gear Reducer

GEARS AND FORGINGS, INC.

Gears and Forgings, Incorporated, Cleveland, recently introduced a two-speed worm gear reduction unit, designed for either horizontal or vertical drives of ⅛ H.P. and up where two speeds are required. This type of speed reducer is manufactured integral with motor or as a separate reduction unit, in speed reduction ratios ranging from 4:1 to 150:1.

The unit consists of a worm and worm gear and a set of differential gears, the driving shafts and their Timken roller bearings all enclosed in a sturdy leakproof and dustproof cast housing. The two speeds are obtained by means of the differential gearing. The high speed is obtained by moving the small hand lever to the right. This locks the differential to the low speed shaft on which the worm gear and differential gearing rotates as one unit. Movement of the hand lever to the left locks the side gear of the differential preventing its rotation. Thus one-half of the revolutions of the worm gear are imparted to the slow speed shaft. Change of output speed can be made while the unit is in operation under full load.

The worm gear of this speed reducer is chilled nickel bronze; its shaft is S. A. E. 3145 steel. For the worm, which is forged integral with its shaft and hardened and ground, S. A. E. 2315 steel is used. All the gears in the differential are of heat treated alloy steel. Running in a bath of oil, the gears receive lubrication. A plug is provided in the housing for determining if proper oil level is maintained.

Complete information on the speed reducer may be obtained by writing Gears and Forgings, Incorporated, Cleveland, Ohio.

Wiring Calculator

DIAMOND ELECTRICAL MANUFACTURING CO., LTD.

Diamond Electrical Manufacturing Company, Los Angeles, has designed to compute complete wiring and motor data, the Square D Calculator. It is a handy, compact unit containing two separate calculators, one computing wiring, the other computing motor data. Its figures are distinct

and legible and are protected by a water-proof celluloid covering.

It may be used as effectively in the field as in the office. Based on the latest issue of the National Electrical Code, it is reliable. Its operation is simple and its computations are accurate and dependable, according the the manufacturers.

Wiring Calculator

The wiring calculator, computing all interior and conduit wiring problems, will figure any one of four items—amperes, feet of wire, size of wire, percentage drop. From the motor calculator dial can be obtained the size of circuit switch, size of starting fuse, size of conduit, size of wire, running protection necessary and full load amperes on any of the three principal types of 220 or 440 volts, three-phase motors.

Square D Calculator does away with mental or written calculation and eye strain as well as trouble in locating charts and determining whether they have become obsolete.

Complete information on this product may be obtained by writing Diamond Electrical Manufacturing Company, Ltd., 1320 East 16 Street, Los Angeles, California.

Chuck Hoist

ECONOMY ENGINEERING COMPANY

Economy Engineering Company, Chicago, designers and manufacturers of hand and power operated lifting equipment, has announced a new hand operated chuck hoist.

The lift is very light and easy to move around in congested places, the base measuring 20 inches wide by 40 inches long with three-inch diameter wheels, those at the rear mounted on swivels and those at the front end fixed. The top of the boom is six feet four inches above the floor, enabling the chuck to be raised high enough for any ordinary lathe. The saddle for the chuck is six inches in width and large enough to accommodate chucks of the size ordinarily weighing up to 200 pounds.

The mast is arranged so as to permit the end of the boom to move to a point about six inches from the center line of the machine on either side. The hoisting gear incidentally is attached to the movable part of the mast to insure proper cable alignment at all times between the drum and overhead sheave wheel. The load is raised by turning the crank and lowered by reversing it, a ratchet and friction disc arrangement automatically holding the load wherever desired.

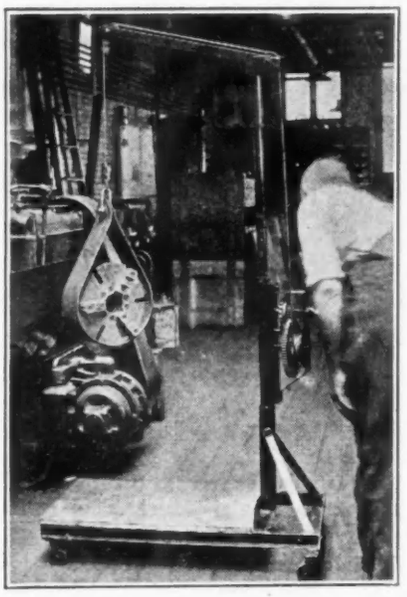
Complete information on the chuck hoist may be obtained by writing Economy Engineering Company, 2653 West Van Buren Street, Chicago, Illinois.

"Nash's Officers of Petroleum Companies in the United States," published by Lloyd N. Nash, P. O. Drawer 1136, Dallas, Texas, is ready for distribution. This register provides an alphabetical list of the officers of companies active in all phases of the petroleum industry, and shows addresses and positions. It is published semi-annually; the report is to be completely revised and corrected in February, 1932.

The addresses carried in this register are those of the individuals and not necessarily those of companies with which they are associated. Where the complete business address is unknown, the name of the city in which the individuals reside is shown in parenthesis, and the addresses of the companies with which they are affiliated are given as their addresses.

Subscribers are respectfully requested to point out omissions and errors so that necessary changes can be made in the next revised edition.

Pittsburgh.—Should the price of Pennsylvania crude oil reach three dollars per barrel, operators in Kane field will drill a number of new wells and flood the old ones, according to advices received from the field. The present price of Pennsylvania crude in that area is 2.15 per barrel.



Economy Chuck Hoist

Hammered Tension Can't Wear Out

The choice of engineers for all purposes—because the tension is obtained by hammering on the inner circumference—where there is no wear. Result: Better compression, uniform lubrication and longer life.

American Hammered Piston Rings

The American Hammered Piston Ring Co.
Baltimore, Maryland

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Ajax Iron Works - - - - Corry, Pa.
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Bradford Supply Co. - - Bradford, Pa.
Clark Bros. - - - - - - Olean, N. Y.
Cooper Bessemer Corp., Mount Vernon, Ohio
Chicago Pneumatic Tool Co., N. Y. City
Dow Pump & Engine Co., Oakland, Cal.
Franklin Valveless Eng. Co., Franklin, Pa.
Gaso Pump & Burner Mfg. Co. Tulsa, Okla.
Ingersoll-Rand Co. - - New York, N. Y.
I. P. M. and De La Vergne Machine Co., Philadelphia, Pa.
McIntosh & Seymour Corp., Auburn, N. Y.
Muncie Oil Engine Co. - - Muncie, Ind.
National Supply Co. - - Toledo, Ohio
Penna. Pump & Compressor Co., Easton, Pa.
Power Mfg. Co. - - - - Marion, Ohio
Jos. Reid Gas Eng. Co. - - Oil City, Pa.
Sullivan Machinery Co., Michigan City, Ind.
Titusville Iron Works - - Titusville, Pa.
Wilson Snyder Mfg. Co., Pittsburgh, Pa.
Worthington Pump & Mach. Corp., N.Y. City

CAN BE OBTAINED IN STANDARD AND OVERSIZES FROM THE ABOVE COMPANIES OR THEIR SELLING AGENTS

Manufacturer and Supply Dealer Notes

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International Derrick To Handle Wheeling Pipe

Columbus, Ohio.—Confirmation has been received from International-Stacey Corporation, located here, and from Wheeling Steel Corporation, Wheeling, West Virginia, that arrangements have been completed for world wide distribution of Wheeling oil country tubular goods to the oil and gas industry, through the sales organization of International Derrick & Equipment division of International-Stacey Corporation. This rounds out IDECO'S very complete line of pumping and drilling material and comes as the result of negotiations during several months between officials of both companies, marking the association of long established leaders in their respective lines. As rapidly as possible IDECO will establish stocks of Wheeling tubular goods, consisting of welded and seamless pipe throughout the active oil and gas fields at strategic distributing centers. This arrangement does not disturb the identities of the two companies which are among the largest of their kinds, nor does it affect the existing distribution of Wheeling tubular goods through other channels.

The Wheeling line of welded and seamless oil country pipe includes A. P. I. and standard drill pipe, casing, tubing, line and drive pipe in a complete range of sizes and weights and thus enlarges the service of International-Stacey Corporation to the industry. For the refinery and pipe line companies, this arrangement immediately makes available Wheeling tubular goods in distributing centers close to their fields of activity.

Natural and artificial gas utility companies will be supplied through the sales organization of Stacey Gas Construction division of International-Stacey Corporation.

Wheeling Steel Corporation and consolidated companies have long been identified with the oil and gas industry. Wheeling pipe is known to have been manufactured and sold throughout the country almost from the beginning of steel pipe manufacture. The line is therefore one of the oldest and has enjoyed a fine reputation throughout its history. Wheeling Steel Corporation as a whole actually dates back to revolutionary days, one of the first iron furnaces having been operated as early as 1715 at Principio, Maryland.

Manufacture of tubular goods both at Benwood, West Virginia, and at Steubenville, Ohio, where plants are operated, is on a large scale and amounts to about a third of the total tonnage of Wheeling Steel Corporation which also produces an extensive line of sheet and wire products.

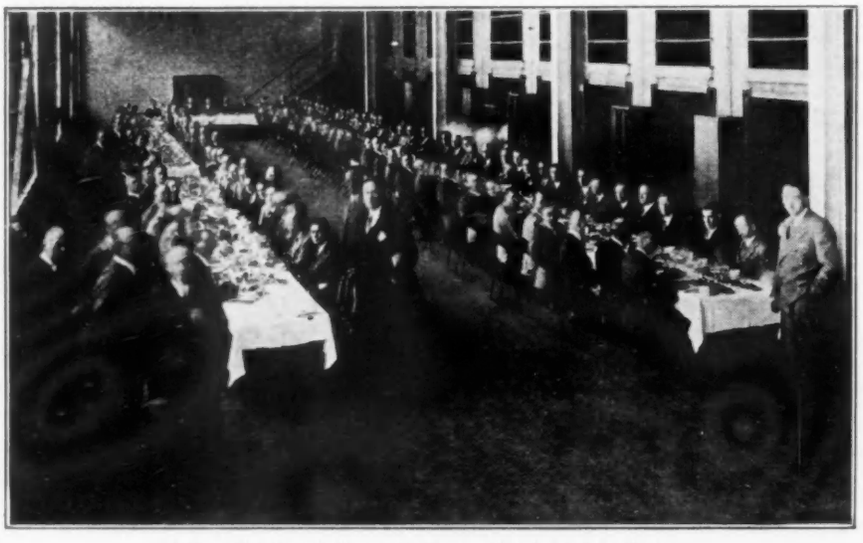
International Derrick & Equipment division of International-Stacey Corporation is the largest independent manufacturer of oil well equipment in the world. Its branches and stocks are located in every important oil field.

American Askania Company, sales and service organization in this country for Askania Werke Company, Berlin-Friedenau, Germany, announces the recent removal of its Houston office from the Marine Bank building to 809 Merchants & Manufacturers building.

George Stubbe is president of the American company and makes his headquarters in the Houston office. H. P. Niemann has been transferred to a newly opened Chicago office at 1630 South Michigan Boulevard, where he will be assistant manager over the industrial division of American Askania Company, that division handled by the Chicago office. H. Ziebolz has recently been transferred from the German factory of Askania Werke in Germany to Chicago as manager of the industrial division in the United States.

Askania Werke is a leading manufacturer of geophysical instruments for locating and defining salt domes and other subsurface conditions in the oil country as well as a manufacturer of a line of scientific instruments for industrial uses.

National Transit Pump & Machine Company, Oil City, Pennsylvania, had as guests several hundred leading Civic Club members and out-of-town visitors at a recent luncheon given in the company's large new storeroom.



When National Transit Entertained at Luncheon

After the luncheon the company's guests witnessed a demonstration by the giant 1200-H.P. gas engine compressor, just completed.

In preparation for an increased business, National Transit Pump & Machine Company, already one of the East's largest industrial plants, has increased its floor space by an additional 124,000 square feet. One of the new buildings constructed is 285 feet long and 165 feet wide. Another, known as the pump storage house, is 285 feet long and 90 feet wide. A new warehouse is 190 feet long and 70 feet wide. A tool department building is 72 feet long and 85 feet wide and an addition to the foundry measures 188 feet long by 75 feet wide. A new laboratory building has also been constructed.

YOU Can Always INCREASE Your INCOME If You Reduce Waste

You Can Positively Eliminate Breathing Losses by using Maloney *Vapor-Pressure* Tanks

THE principal features in the construction of our *Vapor-Pressure* Flow and Stock Tanks include: 12-gauge (or heavier) rust-resistant Keystone Copper Steel; ½″ heat-treated bolts; heavy 2″ angle ties and reinforcements, with wide gussets on ties and ladders; efficient combination valves set at 16 ounces pressure and ½ ounce vacuum; and our special aluminum paint which is made with an exceptionally durable vehicle containing water-proof and alkali-proof Inhiburine.

It is obvious to the thinking producer that this construction restricts the movement of vapors, holds the valuable lighter fractions in the oil, and makes it possible to sell all the oil produced, at well gravity.

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MALONEY TANK MFG. COMPANY
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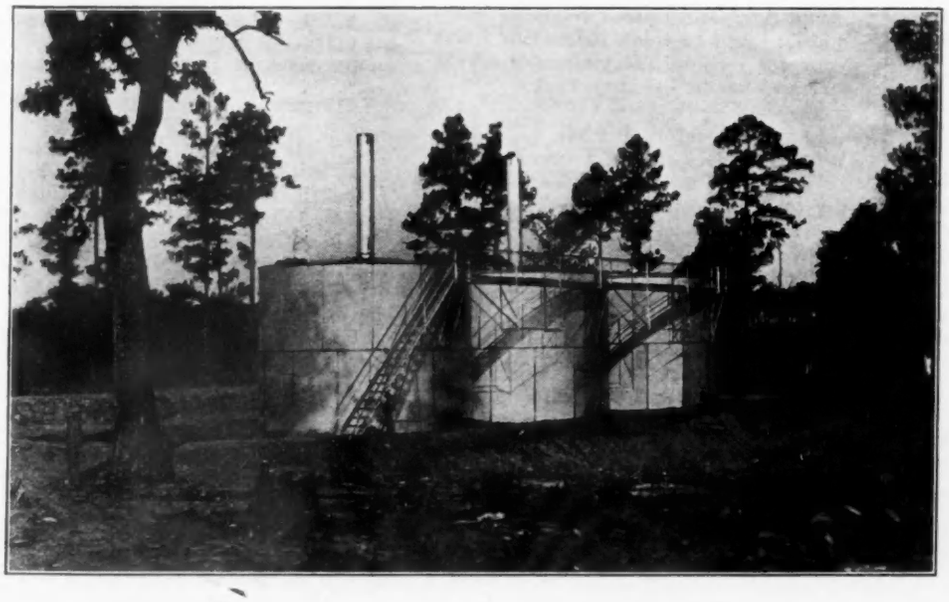
Distributers at All Principal Petroleum Points
Packed in Steel-Bound Crates for Export



MADE OF KEYSTONE AMERICAN

(At left) Three 1,000-Bbl. Maloneys at Joinerville, in East Texas.

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MALONEY

KEEP YOUR
CUTTING
DIES
COOLER

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VUL-CA-NOL—A heat-absorbing, cooling, cutting oil base used in compounding with mineral oil for use in metal and thread cutting. It maintains a cool and consequently sharp cutting edge on the tool, even under the most severe conditions.

VUL-CA-NOL BASE gives increased yield at a lower cost than any cutting oil manufactured. It is suitable for use on any grade of steel, every operation, and all types of machines. Must be reduced with a cheap mineral oil such as fuel oil, paraffin oil or reclaimed oil.

VUL-CA-NOL is especially adapted for tapping and threading, as it does not oxidize or gum, contains no ingredients harmful to the hands, and has a pleasing odor. Cutting oils compounded from VUL-CA-NOL Base leave an anti-rust film on parts used.

Write for free samples and further information.

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COMPANY

5631 So. Riverside Drive,
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Limited distributing territories available to responsible concerns

Squeaks from the Bull Wheel

▼ ▼ ▼

Admiral Grayson, the naval surgeon, was attending a ball in Washington one night, when a lady asked him his name. He replied that he was Admiral Grayson, the naval surgeon.

"My, my!" the lady replied, "How you surgeons do specialize."

The Battleaxe (sarcastically): "I suppose you've been to see a sick friend—holding his hand all evening?"

Mr. Henpeck (sadly): "If I'd been holding his hand I'd have made some money."

Inebriate: "Wash ya looking for?"

Cop: "We're looking for a drowned man."

Inebriate: "Wash you want one for?"

"H'm! So you want a job, eh? Do you ever tell lies?"

"No, sir; but I kin learn!"—Schlits.

Phil. P.—"Mr. Trent, name some of the heavenly bodies."

Trent—"Blondes and Brunettes, sir."

She: "I've been asked to get married lots of times."

He: "Who asked you?"

She: "Mother and Father."

Old-time Mosquito (to young mosquito): "And to think that when I was your age I could bite girls only on the face and hands."—Hurty-Peck.

Lady: "Doctor, I want to reduce. What exercises should I take?"

Doctor: "Push yourself away from the table three times a day."

Grocer—"This is the best brand of peaches on the market—your husband will like them."

Woman—"The peaches my husband likes are not in cans!"

Grocer—"What are they in?"

Woman—"In bathing suits!"

Madam (to Chinese man-servant): "After this, when you enter my bedroom, please knock—I might be dressing."

Chinaman: "Me no need knock. Me allays look in keyhole first."

Lew Hilton, sales representative of Cameron Iron Works, Houston, tells this story as having occurred a good while ago when he was a field superintendent in California. Geologists, engineers and any other college trained men were not held in the highest esteem by the boys out in the fields, ordinarily, and one day in his field a geologist of the company examined a sample of the formation being drilled. The driller had been calling the particular formation "rocks." The geologist informed him that it was "conglomerate," and instructed him to report it as such on his records. The geologist had hardly left, when the field superintendent appeared on the scene of the drilling well. Registering disgust and determination, the driller made the unexpected announcement: "Boss, I'm quitting." Puzzled, the superintendent asked what the trouble was. "Well," said the driller, "that young geologist just told me that I was drilling in 'conglomerate,' and I refuse to drill in anything I can't spell."

Vetus (arrested for speeding): "But your honor, I am a college boy."

Judge: Ignorance doesn't excuse anybody."

Some parties were engaged in drilling a wildcat well near Waco, Texas. When some visitors came up to the location the geologist began to tell them that the well would blow in in the next 200 feet. He kept noticing that the tool dresser hadn't been to the boiler in the last 30 or 40 minutes, finally he asked the tool dresser did he have any water in the boiler.

The tool dresser told him that if he could look down in the earth 2000 feet, and tell when they were going to strike oil, he should be able to see through one-half-inch boiler plating and see whether there is any water in the boiler or not.

The late William Rockefeller used to tell with delight a story illustrative of the financial genius of his famous brother, John.

"When John was a little fellow," he would begin, "a so-called Indian doctor visited our town with a cure-all. The doctor, to get trade started, took out bright new silver dollar and said he would auction it off.

"'How much am I bid,' he said, 'for this bright silver dollar?"

"But the crowd was cautious, silent, suspicious. No bids were made.

"'How much am I bid?' shouted the Indian doctor. 'Come, come gents! A nickel? A dime?'

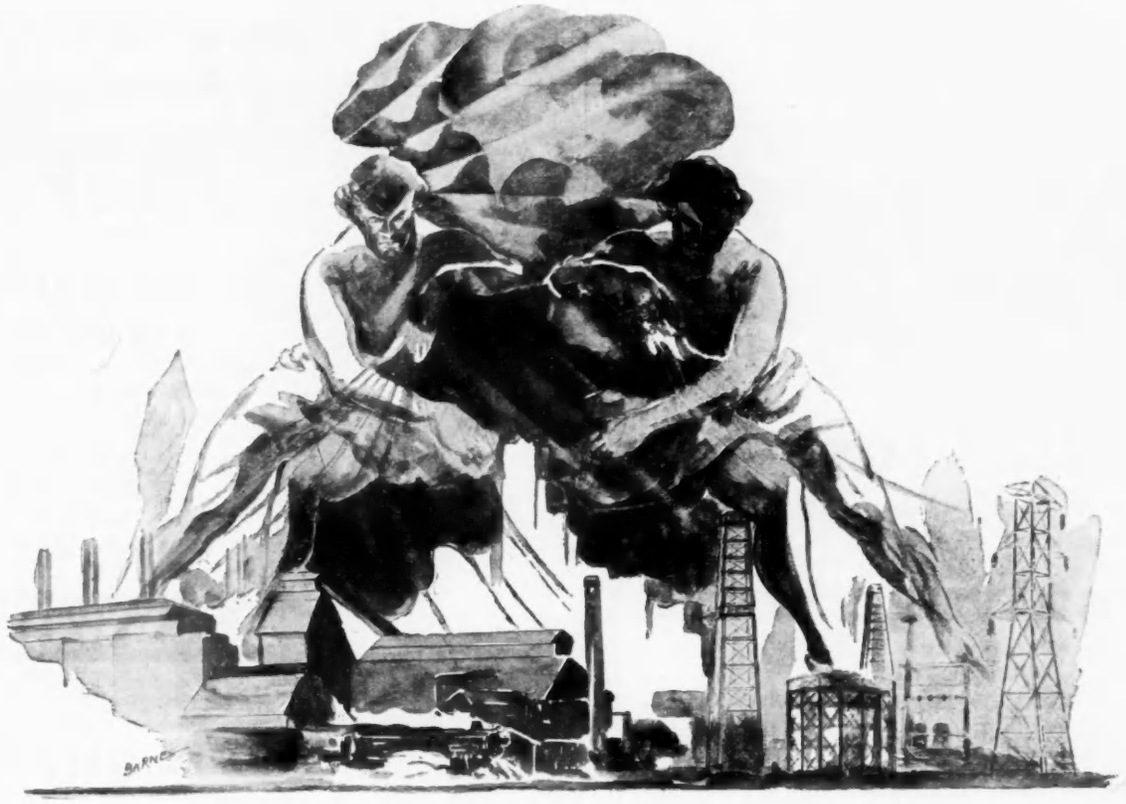
"'I bid a nickel,' piped John D. Rockefeller at last.

"'The dollar is yours, boy,' said the doctor. 'Hand up your nickel.'

"'Take it out of the dollar,' piped little John D., 'and gimme 95 cents change.'"

Judge (to truck driver): "What do you mean by not stopping after you hit this gentleman in the Austin?"

Truck Driver: "Aw, yer honor, I thought it was just a fly on the windshield!"



WHY THE CHOICE OF ELECTRIC POWER REFLECTS THE PROGRESSIVE MIND

EVERY oil company president, superintendent, foreman, worker of every kind....is in competition for advancement with every other in like position. Some go up faster than others. Why?

One of the big reasons *Why* is based on the fact that men and companies that forge ahead make certain that every part of their business machine works efficiently and economically.

Take one of the most important factors.... power. The use of electric power for drilling, for pumping, for refineries, reflects favorably on the earnings of the company and on officers who recommend it. It meets the great need of the present day....economy. There is no surplus power; the operator pays only for what he uses. There is no large outlay for power-generating equipment. Electric power responds as needed ....delicately or with mighty force.

GULF STATES
UTILITIES COMPANY

General Offices

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Use this low-cost method for salvage work!

CLEANING tools, fittings, valves and parts, preparatory to reconditioning, is never a laborious and costly operation when Oakite materials and methods are used.

A short boil in a solution of an Oakite material usually does the job! No matter how dirty the pieces to be reclaimed may be, how heavily encrusted with oil and dirt . . . they come out clean to the metal. Hundreds of parts can be cleaned at one time. Hand scrubbing and scraping are practically eliminated.

For complete information on this and other money-saving Oakite methods, get in touch with our nearest Service Man. No obligation.

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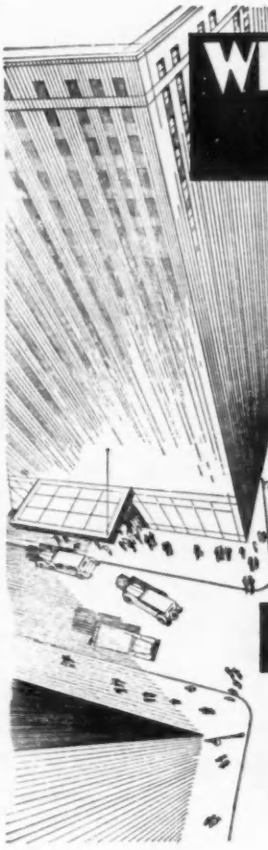

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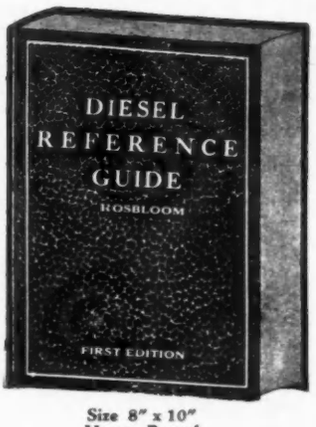

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Wilson Supply Company .....
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STRAIGHT FACTS

The 22nd of a Series and the 5th advertisement on Sucker Rods

Proof of the Pudding lies in the eating . . . .

CONTROLLED PROCESSES

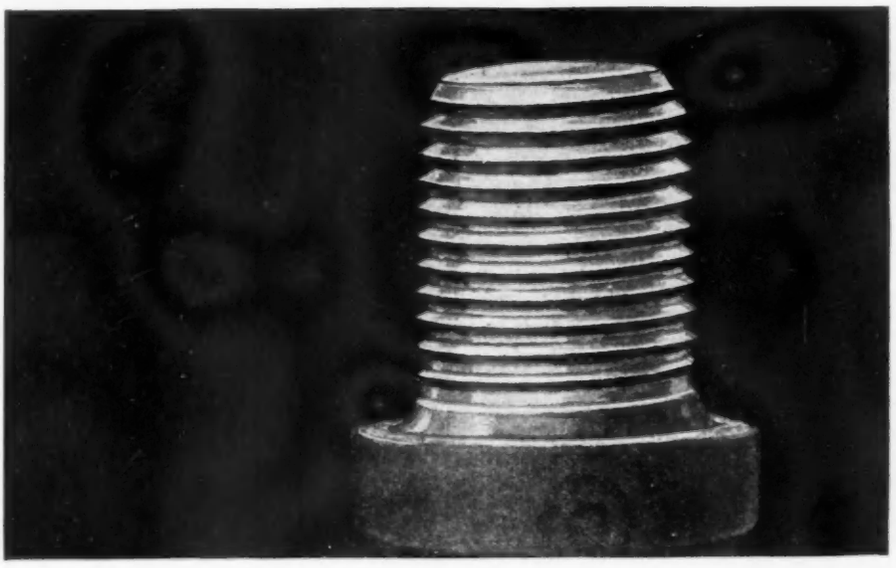
From selected heats of the best alloy steel meeting established physical and chemical standards and properly rolled, Axelson rod stock combines all desirable features, namely; strength, elasticity and ductility. Tested metallurgically and chemically, it offers the ultimate fatigue resistance.

Forged under uniform heat conditions and automatic control, Axelson upset pin ends must have correct flow lines. The increased diameter of the rod just below the forged end retards the possibility of fracture at that point most highly subjected to excessive bending stresses.

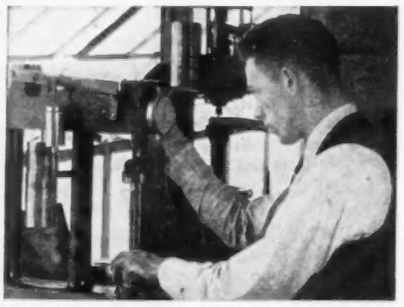
To relieve forging stresses, to refine the grain structure and to lengthen their service life, Axelson rods are scientifically heat-treated by the most modern methods. Each phase of this heat-treatment is automatically governed by recording and controlling pyrometers.

Precision machined to A.P.I. tolerances, every Axelson pin end is subjected to 17 rigid inspections prior to shipment.

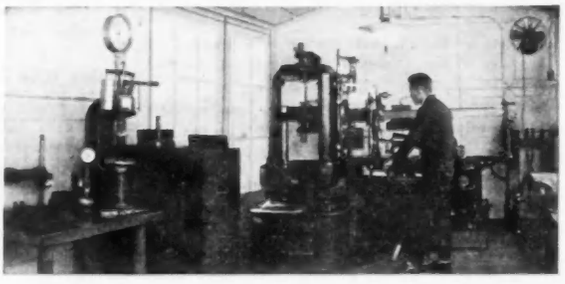
Thirty years of experience in sucker rod manufacture, years filled with research, experiments and development stand behind each Axelson Sucker Rod.



Specimens are subjected to shock test on the Olsen-Izod.



Brinnel and Rockwell harness testers determine the grain structure.



Rods are tested for ultimate strength by an Olsen tensile testing machine.

Read These Records

Axelson Rods installed October 24, 1930.
Tubed to 7020 ft.
Tubing 2½".
Pump—Axelson 2½" Traveling Tube Insert Cup Pump.
Production—360 barrels per day.
One Pin break to date.

Axelson Rods installed December 12, 1930.
Tubed to 6500 ft.
Tubing 2½".
Pump—2½" Axelson Traveling Tube Insert Cup.
Production—150 barrels per day.
No breaks to date.

AXELSON SUCKER RODS

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Tulsa St. Louis
New York City, 30 Church St.
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Frick-Reid Supply Corporation

UNION ROTARY LINE ON No. 1 LEVERICH AT OKLAHOMA CITY

TRADE MARK

The men in the picture, left to right:

Jas. A. Undercofler, Union Wire Rope Corp.
Ed. S. Rankin, Manager, Jarecki Manufacturing Co.
Paul White, Attorney
Henry Rosenthal, Contractor
Sam Springer, Contractor
G. R. Hayes, Tool Pusher, Rose Spring Drilling Co.
Dick Rhodes, Driller
G. S. Hayes, Fireman
Dick Teel: Derrickman
W. H. Brumley, Floorman
Bob Brumley, Floorman
W. H. Schleymeyer, Floorman
Bob Mason, Floorman

The Oklahoma City field has been like other oil districts in one respect—UNION Wire Lines have won preference by serving long and well . . . From selecting raw materials to testing the finished rope, all processes in the manufacture of UNION Wire Lines are under our own supervision and subject to tests at every step to maintain the uniformity which assures dependable service.

Above photograph shows the Phillips Petroleum Corporation's No. 1 Leverich, in Sec. 10-11-3—Rose Spring Drilling Company, Contractors.

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